

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: JANIS DOTE Examiner #: 68274 Date: 2/27/06
Art Unit: 1756 Phone Number 302-1352 Serial Number: 101804719
Mail Box and Bldg/Room Location: REM 9D79 Results Format Preferred (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: AZINE-BASED CHARGE TRANSPORT MATERIALSInventors (please provide full names): NUSRALLAH JUBRAN; ZBIGNIEW TOKARSKI;
KAM LAWEarliest Priority Filing Date: 5/30/03

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

PLEASE SEARCH COMPOUND IN CLAIM 28
WITH THE X GROUP DEFINED IN CLAIM 29
SEE COMPOUNDS IN CLAIM 33 FOR
EXAMPLES.

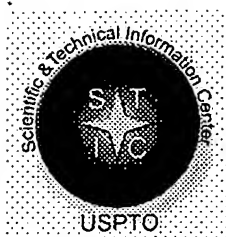
SCIENTIFIC REFERENCE BR
Sci & Tech Inf - Cnt

FEB 27 2006

Pat. & T.M. Office

STAFF USE ONLY

| | Type of Search | Vendors and cost where applicable |
|--|-------------------------------|---|
| Searcher: <u>MQH</u> | NA Sequence (#) _____ | STN <input checked="" type="checkbox"/> |
| Searcher Phone #: _____ | AA Sequence (#) _____ | Dialog _____ |
| Searcher Location: _____ | Structure (#) <u>21 Subst</u> | Questel/Orbit _____ |
| Date Searcher Picked Up: _____ | Bibliographic _____ | Dr. Link _____ |
| Date Completed: <u>3/3/06</u> | Litigation _____ | Lexis/Nexis _____ |
| Searcher Prep & Review Time: <u>20</u> | Fulltext _____ | Sequence Systems _____ |
| Clerical Prep Time: _____ | Patent Family _____ | WWW/Internet _____ |
| Online Time: <u>60</u> | Other _____ | Other (specify) _____ |



STIC Search Report

EIC 1700

STIC Database Tracking Number: 180634

TO: Janis Dote
Location: Rem 9D79
Art Unit : 1756
March 3, 2006

Case Serial Number: 10/804719

From: Mei Huang
Location: EIC 1700
REMSSEN 4B28
Phone: 571/272-3952
Mei.huang@uspto.gov

Search Notes

Examiner Dote,

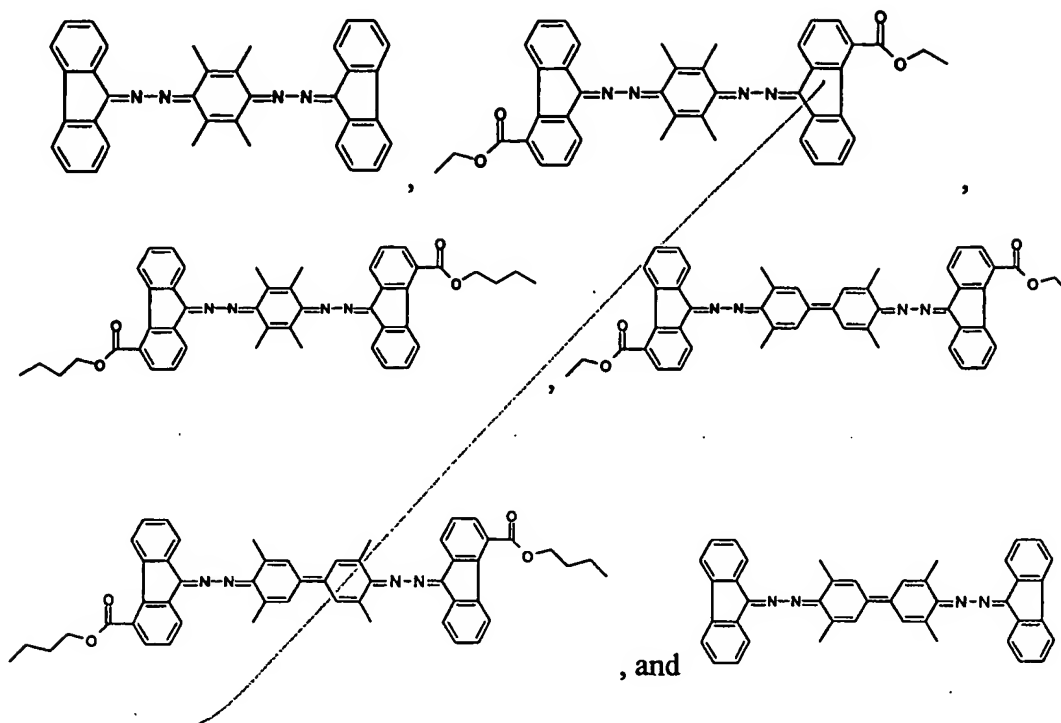
- Search on the subset, L8 on page 1, hit 12 compounds. However all of them were applicant's ones, see L11, L9 and L10.
- Crossover the broader structure query, L6, to CA and further limit with utility terms and 39 answers were retrieved, see L14.

If you have any questions or if you would like to refine the search query, please feel free to contact me.

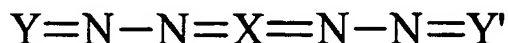
Thank you for using STIC services!

Mei Huang





10 28. A charge transport material having the formula



where Y and Y' are, each independently, a 9-fluorenylidene group and X is a conjugated linking group that allows the delocalization of pi electrons over at least Y and Y'.

15

29. A charge transport material of claim 28 wherein X comprises a 1,2-ethanediylidene group, a 1,4-phenylenedimethyldiyne group, a 2,4-cyclohexadienylidene group, a 2,5-cyclohexadienylidene group, a bicyclohexylidene-2,5,2',5'-tetraene group, a bicyclohexylidene-2,4,2',4'-tetraene group, or a combination thereof.

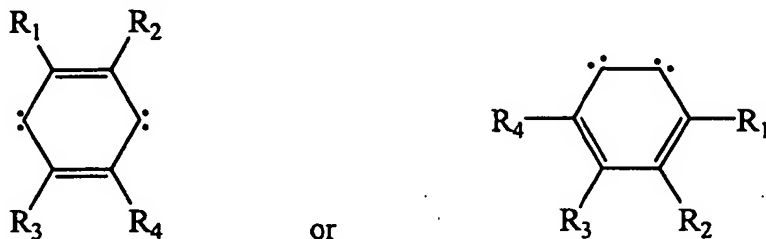
20

30. A charge transport material according to claim 29 wherein X comprises a $(C_6R_1R_2R_3R_4)_n$ group, where the C_6 group is a cyclohexadienylidene group with substituents $R_1R_2R_3R_4$; n is an integer between 1 and 20, inclusive; and R_1 , R_2 , R_3 , and R_4 , each independently, are a hydrogen, a halogen, an amino group, a nitro group, a

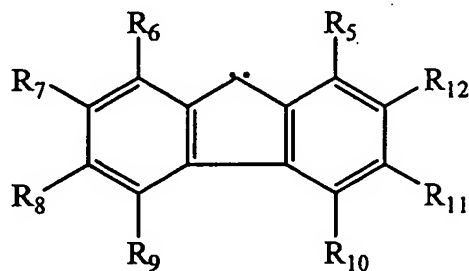
Attorney Docket No.:3216.58US02

cyano group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

31. A charge transport material according to claim 29 wherein the $C_6R_1R_2R_3R_4$ group has one of the following formulae:

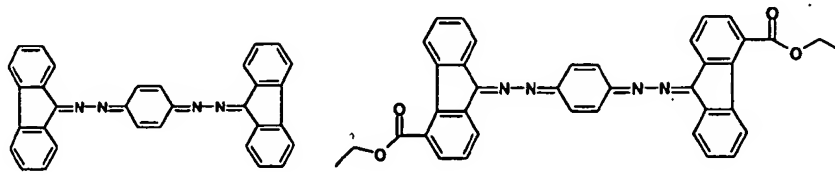


32. A charge transport material according to claim 28 wherein Y and Y', each independently, have the following formula:

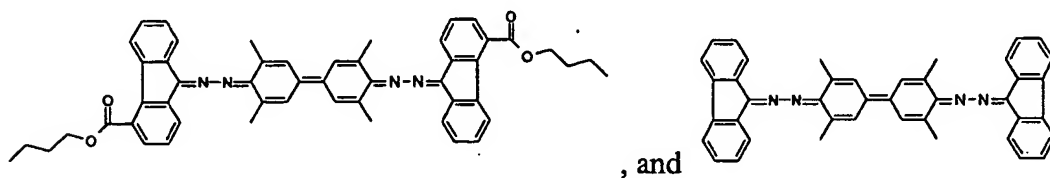
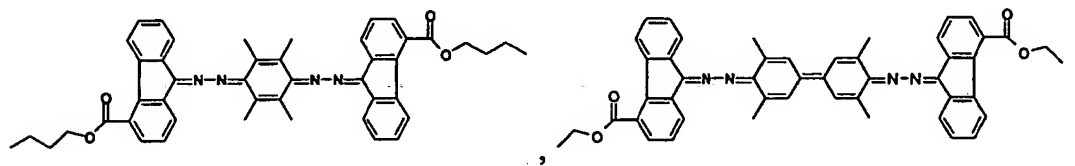
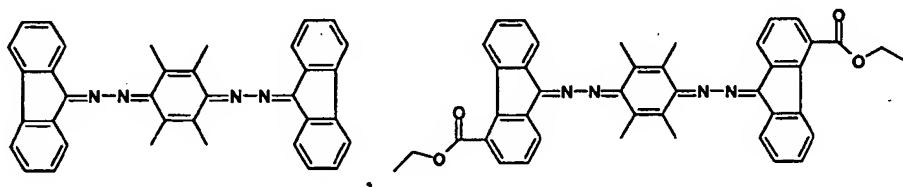
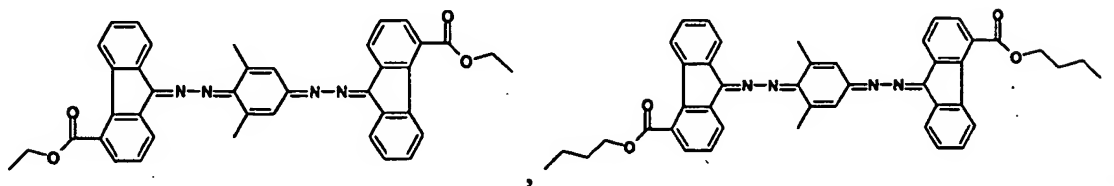
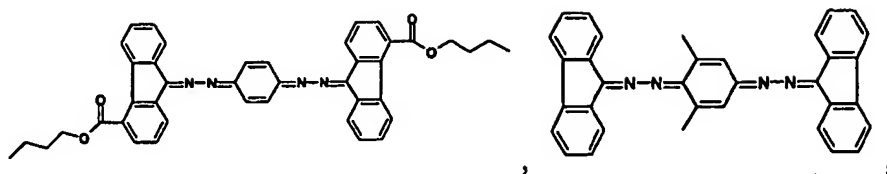


where R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{11} , and R_{12} , each independently, are a hydrogen, a halogen, a hydroxyl group, a thiol group, a carboxyl group, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

33. A charge transport material of claim 28 wherein the charge transport material has the following formulae:



Attorney Docket No.:3216.58US02



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=> fil reg

FILE 'REGISTRY' ENTERED AT 14:16:57 ON 03 MAR 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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(FILE 'HOME' ENTERED AT 12:57:52 ON 03 MAR 2006)

FILE 'HCAPLUS' ENTERED AT 12:58:08 ON 03 MAR 2006

E US20040241562/PN
L1 1 SEA US2004241562/PN
D IALL
SEL RN

FILE 'REGISTRY' ENTERED AT 13:07:03 ON 03 MAR 2006

L2 27 SEA (106-51-4/BI OR 109-77-3/BI OR 13629-22-6/BI OR

L3 STR
L4 STR L3
L5 9 SEA SSS SAM L4
L6 202 SEA SSS FUL L4
SAV L6 DOT719/A
L7 0 SEA SUB=L6 SSS SAM L3
L8 12 SEA SUB=L6 SSS FUL L3
SAV L8 DOT719S1/A
L9 12 SEA L2 AND L6
L10 12 SEA L8 OR L9

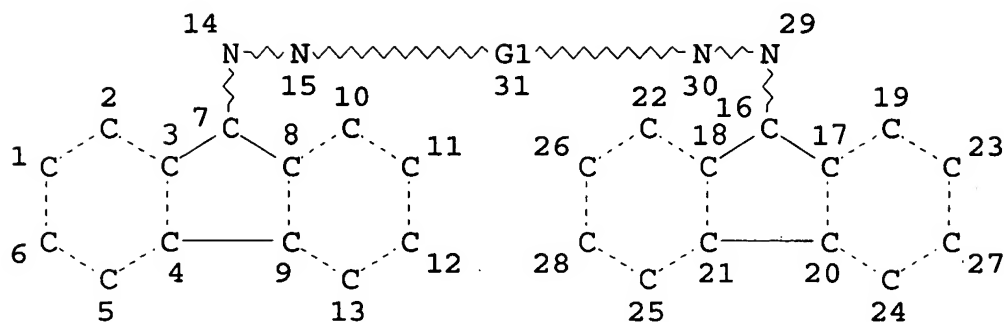
↳ Applicant's compounds

FILE 'HCAPLUS' ENTERED AT 14:03:38 ON 03 MAR 2006

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L12 83 SEA L6
L13 106261 SEA CHARG?(2A) (TRANSPORT? OR TRANSFER? OR MIGRAT? OR
MOVE# OR MOVING# OR MOVEMENT?)
L14 39 SEA L12 AND L13

=> d l8 que stat

L3 STR



Cb @32

Cb~Cb
@33 @34

VAR G1=32/33-15 34-30

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY UNS AT 32

GGCAT IS MCY UNS AT 33

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ECOUNT IS E6 C AT 32

ECOUNT IS E6 C AT 33

ECOUNT IS E6 C AT 34

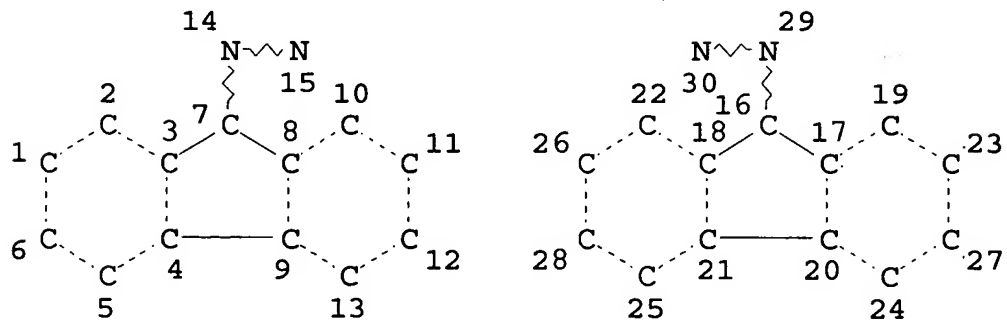
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE

L4 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE
L6 202 SEA FILE=REGISTRY SSS FUL L4
L8 12 SEA FILE=REGISTRY SUB=L6 SSS FUL L3

100.0% PROCESSED 202 ITERATIONS 12 ANSWERS
SEARCH TIME: 00.00.01

=> fil hcap
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=> d l14 ibib abs fhitr hitind 1-39

L14 ANSWER 1 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:104653 HCAPLUS
DOCUMENT NUMBER: 144:180757
TITLE: Azine-based **charge transport**
materials having a bicyclic heterocyclic ring
INVENTOR(S): Jubran, Nusrallah; Tokarski, Zbigniew
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 21 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------|
| US 2006024599 | A1 | 20060202 | US 2004-900785 | 200407 |

PRIORITY APPLN. INFO.:

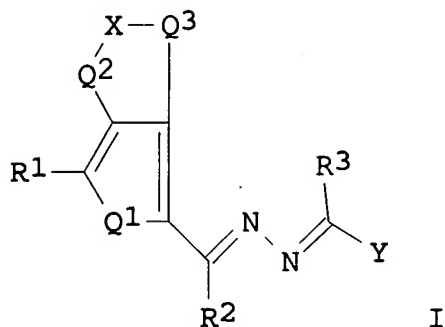
US 2004-900785

28

200407

28

GI



AB Improved organophotoreceptor comprises an elec. conductive substrate and a photoconductive element, on the substrate, contg. (a) a **charge transport** material having the formula I [Y = arom.; X is a $-(CH_2)_n-$ group, where n is an integer between 1 and 10, inclusive, and one or more of the methylene groups is optionally replaced by another atom or group; Q1 Q2, and Q3 = O, S, or NR; R, R1, R2, and R3 = H, an alkyl group, an alkenyl group, an alkynyl group, an amino group, an acyl group, an alkoxy group, an alkylsulfanyl group, an arom. group, or a heterocyclic group] and (b) a charge generating compd. Corresponding electrophotog. apparatuses and imaging methods are described.

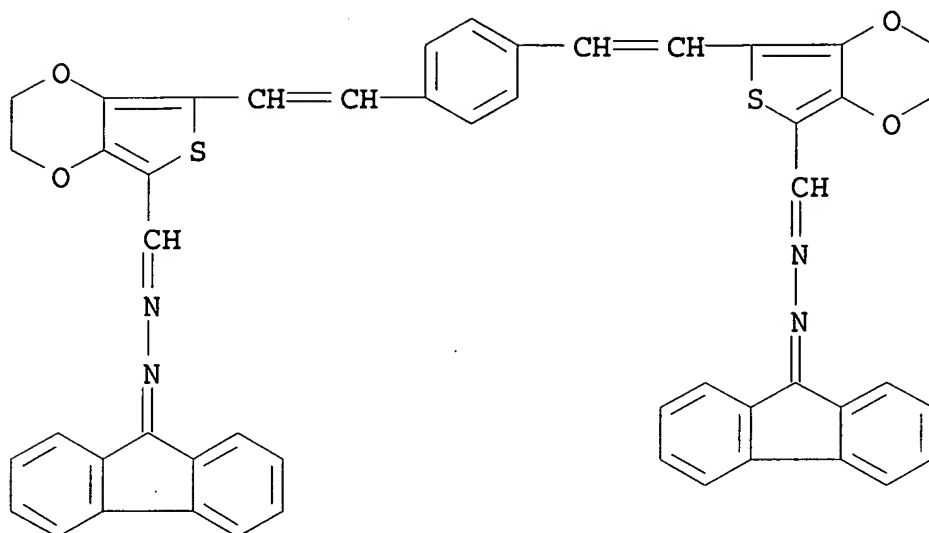
IT 874771-75-2P

RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(azine-based **charge transport** materials having a bicyclic heterocyclic ring)

RN 874771-75-2 HCAPLUS

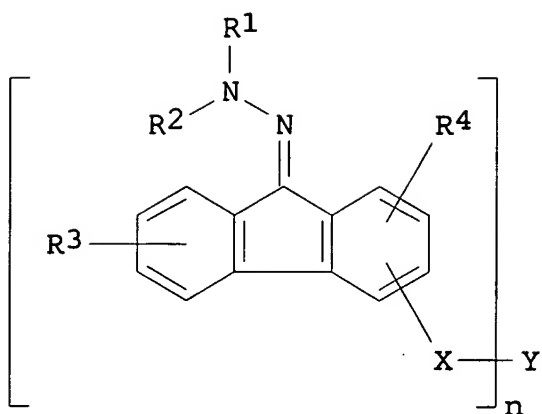
CN INDEX NAME NOT YET ASSIGNED



INCL 430075000; 430078000; 430077000; 430079000; 549050000; 548444000
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST azine **charge transport** material electrophotog
 photoreceptor
 IT Electrophotographic photoconductors (photoreceptors)
 (azine-based **charge transport** materials
 having a bicyclic heterocyclic ring)
 IT 874771-72-9P 874771-74-1P **874771-75-2P** 874771-76-3P
 874771-77-4P **874771-78-5P**
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (azine-based **charge transport** materials
 having a bicyclic heterocyclic ring)
 IT 68-12-2, Dimethylformamide, reactions 10025-87-3, Phosphorus
 oxychloride 13629-22-6, 9-Fluorenone hydrazone 417704-16-6
 871209-25-5 871209-27-7 874771-73-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (azine-based **charge transport** materials
 having a bicyclic heterocyclic ring)
 IT 871239-77-9P 874771-71-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (azine-based **charge transport** materials
 having a bicyclic heterocyclic ring)

L14 ANSWER 2 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:283987 HCAPLUS
DOCUMENT NUMBER: 142:363705
TITLE: Organophotoreceptor with **charge**
transport material having fluorenone
hydrazone groups
INVENTOR(S): Jubran, Nusrallah; Tokarski, Zbigniew; Law, Kam
W.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 34 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|-------------------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | |
| US 2005069794 | A1 | 20050331 | US 2003-671172 | 200309 25 |
| EP 1522899 | A2 | 20050413 | EP 2004-255825 | 200409 24 |
| EP 1522899 | A3 | 20051214 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| JP 2005099811 | A2 | 20050414 | JP 2004-280261 | 200409 27 |
| PRIORITY APPLN. INFO.: | | | US 2003-671172 | A 200309 25 |
| OTHER SOURCE(S): | MARPAT 142:363705 | | | |
| GI | | | | |



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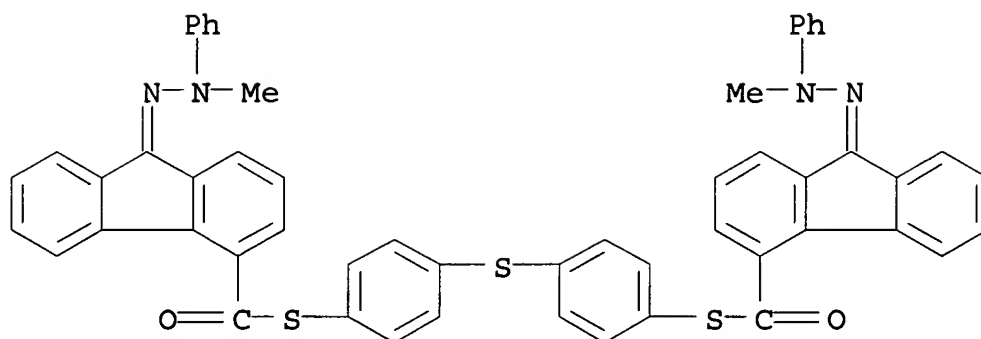
AB Disclosed is an organophotoreceptor comprising an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, wherein the photoconductive element comprises a **charge transport** material having the formula I ($n = 2-6$; $R_{1,2}$ = alkyl group, alkaryl group, or aryl group; $R_{3,4}$ = H, halogen, carboxyl, hydroxyl, thiol, etc.; $X = -(CH_2)_m-$; $m = 0-20$; $Y = C, N, O, S, -(CH_2)_p-$; and $p = 0-10$).

IT 848829-15-2

RL: DEV (Device component use); USES (Uses)
(organophotoreceptor with **charge transport**
material having fluorenone hydrazone groups)

RN 848829-15-2 HCAPLUS

CN 9H-Fluorene-4-carbothioic acid, 9-(methylphenylhydrazono)-,
S,S'-(thiodi-4,1-phenylene) ester (9CI) (CA INDEX NAME)



IC ICM G03G005-05

INCL 430072000; 430077000; 430117000; 430970000; 430058150; 430058350

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25

ST organophotoreceptor photoreceptor electrophotog **charge transport** fluorenone hydrazone group

IT Electrophotographic photoconductors (photoreceptors)
(organophotoreceptor with **charge transport**
material having fluorenone hydrazone groups)

IT 848829-15-2 848829-16-3

RL: DEV (Device component use); USES (Uses)

(organophotoreceptor with **charge transport**
material having fluorenone hydrazone groups)

L14 ANSWER 3 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:275365 HCAPLUS

DOCUMENT NUMBER: 142:345115

TITLE: Organophotoreceptor with **charge transport** material having
bis(9-fluorenone) azine groups

INVENTOR(S): Jubran, Nusrallah; Law, Kam W.; Tokarski, Zbigniew

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: Eur. Pat. Appl., 30 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO.

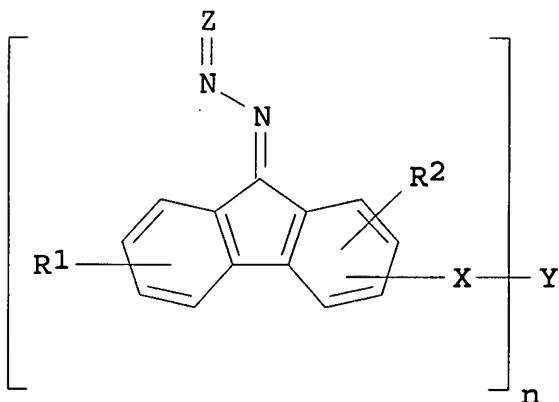
DATE

MEI HUANG EIC1700 REM4B28 571-272-3952

03/03/2006

| | | | | |
|---|----|----------|----------------|-------------------|
| EP 1519240 | A2 | 20050330 | EP 2004-255822 | 200409 24 |
| EP 1519240 | A3 | 20051214 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| US 2005069795 | A1 | 20050331 | US 2003-671255 | 200309 25 |
| JP 2005099810 | A2 | 20050414 | JP 2004-280252 | 200409 27 |
| PRIORITY APPLN. INFO.: | | | US 2003-671255 | A 200309 25 |

OTHER SOURCE(S): MARPAT 142:345115
GI



AB The present invention provides organo photoreceptor comprising an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, the photoconductive element comprising:
(a) a **charge transport** material having the general formula I (n = 2-6, inclusive; R1,2 = H, halogen, carboxyl,

hydroxyl, thiol, cyano, nitro, aldehyde group, ketone group, an ether group, an ester group, a carbonyl group, an alkyl group, an alkaryl group, or an aryl group; X = linking group having the formula $-(CH_2)_m-$, branched or linear, where $m = 0-20$, inclusive, and one or more of the methylene groups can be optionally replaced by O, S, C=O, O=S=O, urethane, urea, an ester group, etc.; Y = bond, C, N, O, S, a branched or linear $-(CH_2)_p-$ group where p is an integer between 0 and 10, an arom. group, a cycloalkyl group, a heterocyclic group, etc., wherein Y has a structure selected to form n bonds with the corresponding X groups; and Z is a fluorenylidene group) and (b) a charge generating compd.

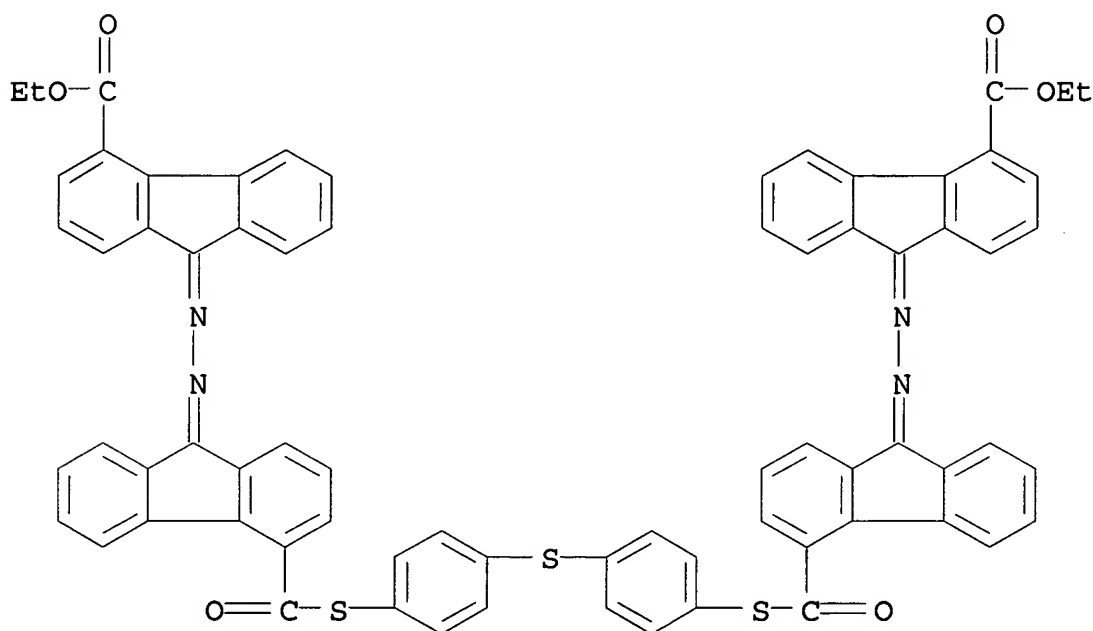
IT 848761-64-8P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(charge transport material for organo photoreceptor)

RN 848761-64-8 HCAPLUS

CN 9H-Fluorene-4-carboxylic acid, 9,9'-[thiobis(4,1-phenylenethiocarbonyl-9H-fluoren-4-yl-9-ylideneazino)]bis-, diethyl ester (9CI) (CA INDEX NAME)



IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and

- Other Reprographic Processes)
- ST electrophotog organo photoreceptor **charge transport** material fluorenone azine
- IT Electrophotographic photoconductors (photoreceptors)
(organo photoreceptor with **charge transport** material having bis(9-fluorenone) azine groups)
- IT 848761-64-8P 848761-65-9P 848761-66-0P
848761-67-1P 848761-68-2P 848761-69-3P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**charge transport** material for organo photoreceptor)
- IT 848761-70-6P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**charge transport** material for organo photoreceptor)
- IT 5447-75-6P 93376-18-2P 93519-65-4P 801221-57-8P 848657-47-6P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of **charge transport** material for organo photoreceptor)
- IT 71-36-3, n-Butanol, reactions 109-77-3, Malononitrile 111-46-6, Diethylene glycol, reactions 112-47-0, 1,10-Decanediol 302-01-2, Hydrazine, reactions 1072-71-5, 1,3,4-Thiadiazolidine-2,5-dithione 6223-83-2, Fluorenone-4-carboxylic acid 7071-83-2, 9-Fluorenone-4-carbonyl chloride 19362-77-7, 4,4'-Thiobisbenzenethiol 27205-03-4, Bis[4-(2-hydroxyethoxy)phenyl]sulfone 117344-32-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **charge transport** material for organo photoreceptor)

L14 ANSWER 4 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:275364 HCAPLUS

DOCUMENT NUMBER: 142:345114

TITLE: Organophotoreceptor with a **charge transport** material having at least two azine groups

INVENTOR(S): Jubran, Nusrallah; Law, Kam W.; Tokarski, Zbigniew

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: Eur. Pat. Appl., 28 pp.

CODEN: EPXXDW

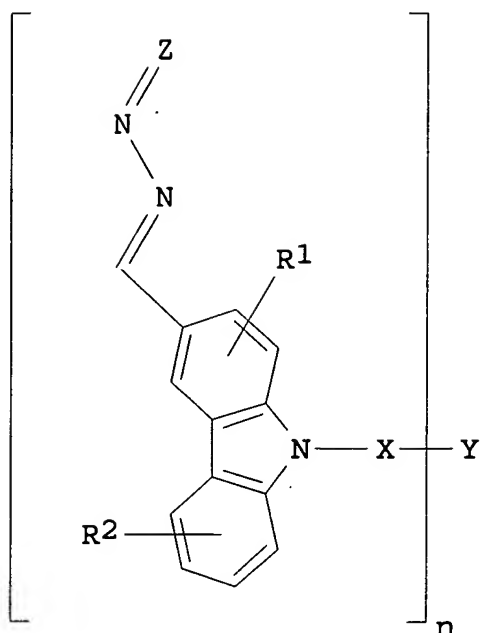
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

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| ----- | ---- | ----- | ----- | |
| EP 1519239 | A2 | 20050330 | EP 2004-255821 | 200409 24 |
| EP 1519239 | A3 | 20051214 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| US 2005069798 | A1 | 20050331 | US 2003-670943 | 200309 25 |
| US 6955869 | B2 | 20051018 | | |
| JP 2005099808 | A2 | 20050414 | JP 2004-280065 | 200409 27 |
| PRIORITY APPLN. INFO.: | | | US 2003-670943 | A 200309 25 |
| OTHER SOURCE(S): | MARPAT 142:345114 | | | |
| GI | | | | |



I

AB The present invention provides organophotoreceptors comprising an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, the photoconductive element comprising:

(a) a **charge transport** material having the formula I ($n = 2-6$, inclusive; $R1,2 = H$, halogen, carboxyl, hydroxyl, thiol, cyano, nitro, aldehyde group, ketone group, an ether group, an ester group, a carbonyl group, an alkyl group, an alkaryl group, or an aryl group; $X =$ linking group having the formula $-(CH_2)_m-$, branched or linear, where $m = 0-20$, inclusive, and one or more of the methylene groups can be optionally replaced by O, S, C=O, O=S=O, urethane, urea, an ester group, etc.; $Y =$ bond, C, N, O, S, a branched or linear $-(CH_2)_p-$ group where p is an integer between 0 and 10, an arom. group, a cycloalkyl group, a heterocyclic group, etc., wherein Y has a structure selected to form n bonds with the corresponding X groups; and Z is a fluorenylidene group); and

(b) a charge generating compd. Corresponding electrophotog. apparatuses and imaging methods (processes) are described, as are corresponding **charge transport** materials.

IT 848657-51-2P

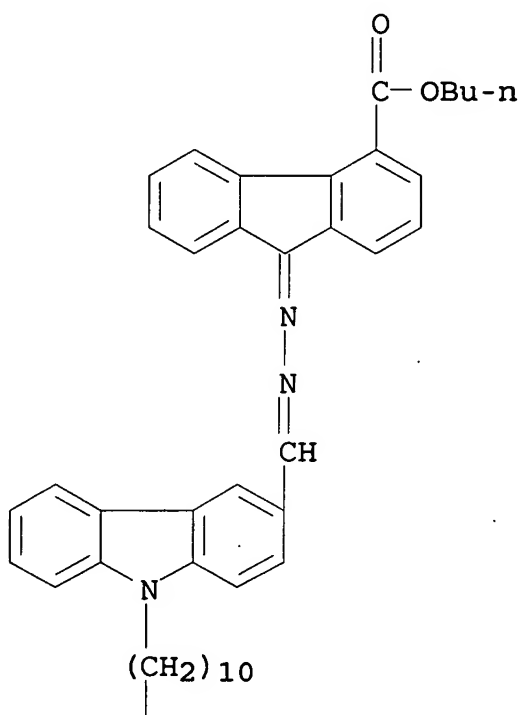
RL: SPN (Synthetic preparation); TEM (Technical or engineered

material use); PREP (Preparation); USES (Uses)
(organophotoreceptor with **charge transport**
material having at least two azine groups)

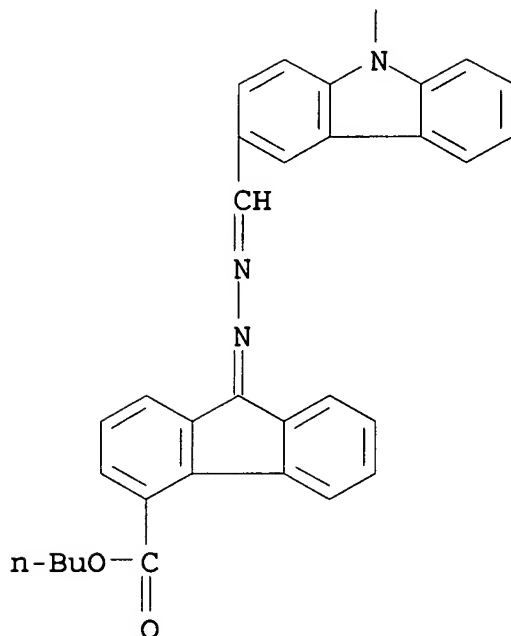
RN 848657-51-2 HCAPLUS

CN 9H-Fluorene-4-carboxylic acid, 9,9'-[1,10-decanediylbis(9H-carbazole-9,3-diylmethylideneazino)]bis-, dibutyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST electrophotog organophotoreceptor **charge transport**
 material least azine
 IT Electrophotographic photoconductors (photoreceptors)
 (organophotoreceptor with **charge transport**
 material having at least two azine groups)
 IT 848657-51-2P 848657-52-3P 848657-53-4P
 848657-54-5P 848657-55-6P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (organophotoreceptor with **charge transport**
 material having at least two azine groups)
 IT 5447-75-6P 60834-42-6P 93519-65-4P 169834-33-7P 762276-52-8P
 848657-47-6P 848657-48-7P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
 PREP (Preparation); RACT (Reactant or reagent)
 (prepn. for organophotoreceptor with **charge**
transport material having at least two azine groups)
 IT 56-37-1, Benzyltriethyl ammonium chloride 86-74-8, Carbazole
 109-77-3, Malononitrile 111-50-2, Adipoyl chloride 302-01-2,

Hydrazine, reactions 1484-14-6, N-(Hydroxyethyl)carbazole
3344-70-5, 1,12-Dibromododecane 4101-68-2, 1,10-Dibromodecane
6223-83-2, Fluorenone-4-carboxylic acid 36839-55-1,
1,2-Bis(2-iodoethoxy)ethane

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. for organophotoreceptor with **charge**

transport material having at least two azine groups)

IT 93376-18-2P 801221-57-8P 848657-49-8P 848657-50-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

RACT (Reactant or reagent)

(prepn. for organophotoreceptor with **charge**

transport material having at least two azine groups)

L14 ANSWER 5 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:275363 HCAPLUS

DOCUMENT NUMBER: 142:345113

TITLE: Organophotoreceptor with **charge**
transport material with fluorenone azine
groups

INVENTOR(S): Jubran, Nusrallah; Law, Kam W.; Tokarski,
Zbigniew

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: Eur. Pat. Appl., 27 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|--------------|
| ----- | ---- | ----- | ----- | |
| EP 1519238 | A2 | 20050330 | EP 2004-255819 | 200409 24 |
| EP 1519238 | A3 | 20051214 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| US 2005069793 | A1 | 20050331 | US 2003-670483 | 200309 25 |
| CN 1601389 | A | 20050330 | CN 2004-10082459 | 200409 22 |

JP 2005099809

A2

20050414

JP 2004-280236

200409
27

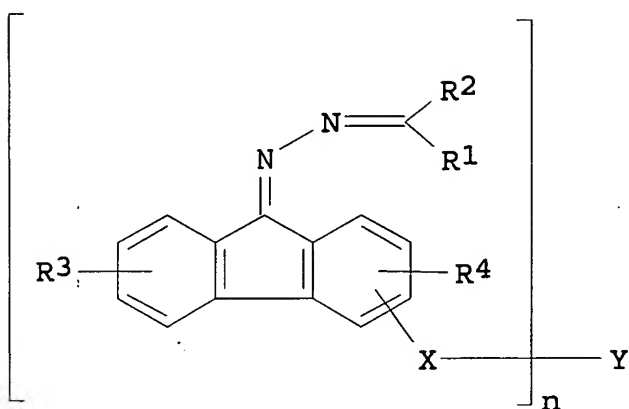
PRIORITY APPLN. INFO.:

US 2003-670483

A

200309
25OTHER SOURCE(S):
GI

MARPAT 142:345113



AB The present invention provides organo photoreceptors comprising an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, the photoconductive element comprising: (a) a **charge transport** material having the general formula I ($N = 2-6$; $R_{1,2} = H$, alkyl, alkaryl, heterocyclic, aryl group; $R_{3,4} = H$, halogen, carboxyl, hydroxyl, thiol, cyano, nitro, aldehyde group, ketone, ether, ester, carbonyl, alkyl, alkaryl, aryl group; $X = (CH_2)_m$; $m = 0-20$; $Y = (CH_2)_p$, arom. group, cycloalkyl group, heterocyclic group, etc.; $p = 0-10$) and (b) a charge generating compd. Corresponding electrophotog. apparatuses and imaging methods (processes) are described, as are corresponding **charge transport** materials.

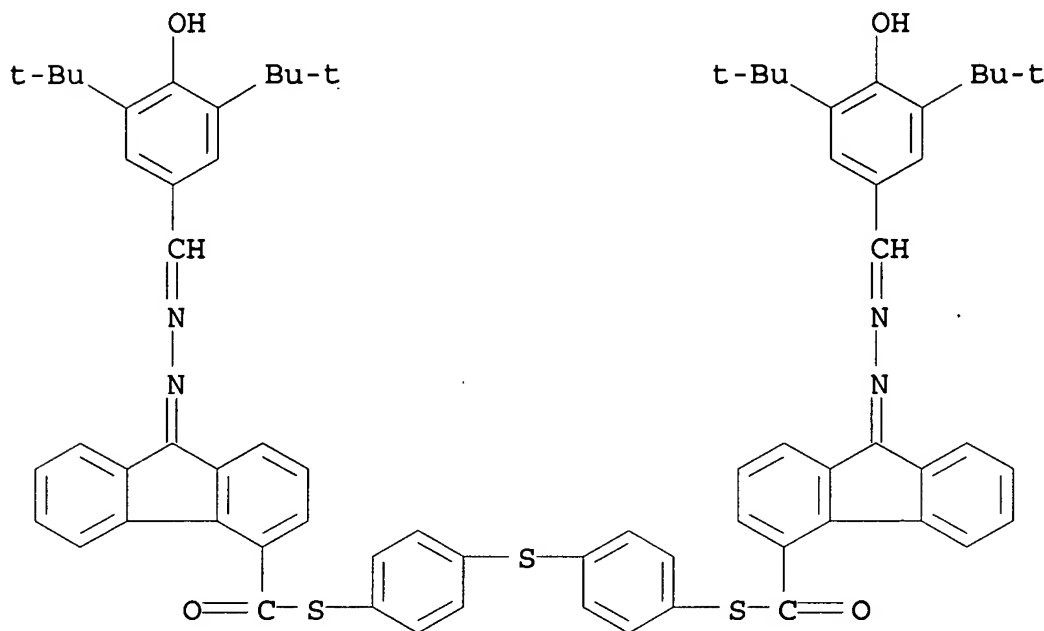
IT 848668-03-1P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(organo photoreceptor with **charge transport** material with fluorenone azine groups)

RN 848668-03-1 HCAPLUS

CN 9H-Fluorene-4-carbothioic acid, 9-[[[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methylene]hydrazono] -, S,S'-(thiodi-4,1-phenylene)
ester (9CI) (CA INDEX NAME)



IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
ST electrophotog organo photoreceptor **charge**
transport material fluorenone azine
IT Electrophotographic photoconductors (photoreceptors)
(organo photoreceptor with **charge transport**
material with fluorenone azine groups)
IT 848668-03-1P 848668-04-2P 848668-05-3P
848668-06-4P 848668-07-5P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical
or engineered material use); PREP (Preparation); USES (Uses)
(organo photoreceptor with **charge transport**
material with fluorenone azine groups)
IT 848668-08-6P
RL: IMF (Industrial manufacture); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)
(organo photoreceptor with **charge transport**
material with fluorenone azine groups)
IT 93519-65-4P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
PREP (Preparation); RACT (Reactant or reagent)

(prepn. of organo photoreceptor with **charge**
transport material with fluorenone azine groups)

IT 848668-01-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(prepn. of organo photoreceptor with **charge**
transport material with fluorenone azine groups)

IT 109-77-3, Malononitrile 111-46-6, Diethylene glycol, reactions
112-47-0, 1,10-Decanediol 1072-71-5, 1,3,4-Thiadiazolidine-2,5-
dithione 6223-83-2, Fluorenone-4-carboxylic acid 7071-83-2,
9-Fluorenone-4-carbonyl chloride 19362-77-7, 4,4'-
Thiobisbenzenethiol 27205-03-4, Bis[4-(2-
hydroxyethoxy)phenyl]sulfone 117344-32-8 207226-32-2
RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of organo photoreceptor with **charge**
transport material with fluorenone azine groups)

IT 848668-02-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)

(prepn. of organo photoreceptor with **charge**
transport material with fluorenone azine groups)

L14 ANSWER 6 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1965 HCAPLUS

DOCUMENT NUMBER: 142:103066

TITLE: Azine-based dimeric **charge**
transport materials

INVENTOR(S): Tokarski, Zbigniew; Jubran, Nusrallah; Getautis,
Vytautas; Gaidelis, Valentas; Daskeviciene,
Maryte; Montrimas, Edmundas; Paulauskaite,
Ingrida; Sidaravicius, Jonas

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|------|
| ----- | ---- | ----- | ----- | |
| US 2004265717 | A1 | 20041230 | US 2004-760039 | |

200401
16

EP 1494080

A1 20050105

EP 2004-253868

200406
29

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
PL, SK, HR

JP 2005025192

A2 20050127

JP 2004-194403

200406
30

PRIORITY APPLN. INFO.:

US 2003-483726P

P

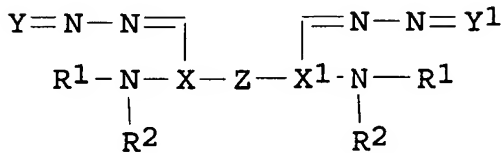
200306
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US 2004-760039

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200401
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OTHER SOURCE(S): MARPAT 142:103066
GI



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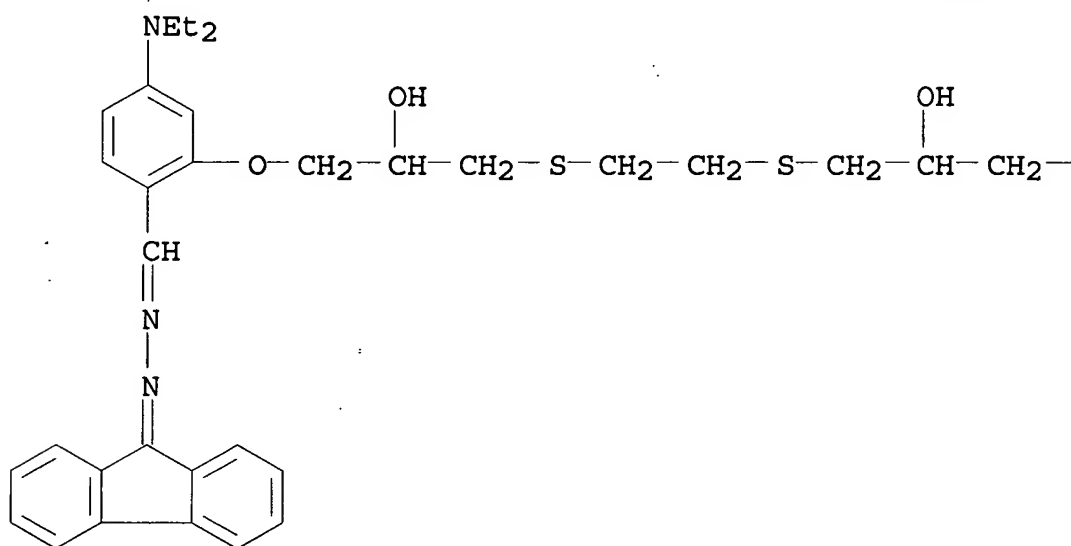
- AB Improved organo photoreceptor comprises an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, the photoconductive element comprising: (a) a **charge transport** material having the formula I (R1-4 = alkyl group, alkenyl group, arom. group, heterocyclic group, or a part of a ring group; X and X' = arom. group; Y and Y' = (disubstituted)methylene group; and Z is a linking group); (b) a charge generating compd.; and (c) an elec. conductive substrate on which said **charge transport** material and said charge generating compd. are located. Corresponding electrophotog. apparatuses and imaging methods are also described.
- IT **816463-93-1P**
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(azine-based dimeric **charge transport**
materials for electrophotog.)

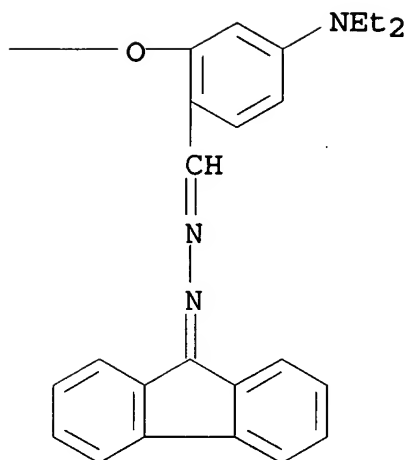
RN 816463-93-1 HCAPLUS

CN Benzaldehyde, 2,2'-[1,2-ethanediylbis[thio(2-hydroxy-3,1-
propanediyl)oxy]]bis[4-(diethylamino)-, bis(9H-fluoren-9-
ylidenehydrazone) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G03G005-06
ICS C07C251-72

INCL 430058350; 430072000; 430077000; 430074000; 430058650; 564251000

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST azine dimeric electrophotog photoreceptor **charge transport** material

IT Electrophotographic photoconductors (photoreceptors)
(azine-based dimeric **charge transport** materials)

IT 816463-93-1P 816463-94-2P 816463-95-3P
816463-96-4P 816463-97-5P 816463-98-6P
816463-99-7P 816464-00-3P 816464-01-4P
816464-02-5P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(azine-based dimeric **charge transport** materials for electrophotog.)

IT 2915-84-6P, 2,7-Diamino-9-fluorenone 122010-64-4P 215377-16-5P
816464-03-6P 816464-04-7P 816464-05-8P 816464-07-0P
816464-08-1P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
PREP (Preparation); RACT (Reactant or reagent)
(prepn. of azine-based dimeric **charge transport**

materials for electrophotog.)

IT 80-05-7, reactions 90-93-7 106-89-8, Epichlorohydrin, reactions
108-46-3, 1,3-Benzenediol, reactions 486-25-9, 9-Fluorenone
540-63-6, 1,2-Ethanedithiol 626-04-0, 1,3-Benzenedithiol
1072-71-5, 1,3,4-Thiadiazolidine-2,5-dithione 2425-79-8,
1,4-Butanediol diglycidyl ether 17754-90-4, 4-
Diethylaminosalicylaldehyde 19362-77-7, 4,4'-Thiobisbenzenethiol
31551-45-8, 2,7-Dinitro-9-fluorenone

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of azine-based dimeric **charge transport**
materials for electrophotog.)

IT 13629-22-6P 816464-06-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)

(prepn. of azine-based dimeric **charge transport**
materials for electrophotog.)

L14 ANSWER 7 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:1035121 HCAPLUS

DOCUMENT NUMBER: 142:29941

TITLE: Electrophotographic photoreceptors comprising
azine-based **charge transport**
materials

INVENTOR(S): Jurban, Nusrallah; Law, Kam W.; Tokarski,
Zbigniew

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: Eur. Pat. Appl., 31 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| EP 1482377 | A1 | 20041201 | EP 2004-253164 | 200405 28 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| US 2004241562 | A1 | 20041202 | US 2004-804719 | 200403 19 |

JP 2004361951 A2 20041224 JP 2004-162291
CN 1601388 A 20050330 CN 2004-10068420

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31

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31

PRIORITY APPLN. INFO.:

US 2003-474543P P

200305
30

US 2003-483727P P

200306
30

US 2004-804719 A

200403
19

OTHER SOURCE(S): MARPAT 142:29941

AB The present invention provides organophotoreceptors comprising an elec. conductive substrate and a photoconductive element on the elec. conductive substrate where the photoconductive element comprises: (a) a **charge transport** material having the formula (1): $Y=N-N=X=N-N=Y1$ (Y, Y1 = 9-fluorenylidene; X = conjugated linking group that allows the delocalization of pi electrons over at least Y and Y1, such as 1,2-ethanediylidene, 1,4-phenylenedimethyldiyne, 2,4-cyclohexadienyldiene, 2,5-cyclohexadienyldiene, bicyclohexyldiene-2,5,2',5'-tetraene, bicyclohexyldiene-2,4,2',4'-tetraene); and (b) a charge generating compd. Corresponding electrophotog. apparatuses, imaging methods and processes, and **charge transport** materials are described. This invention aims to provide organophotoreceptors having good electrostatic properties such as high V_{acc} and low V_{dis} .

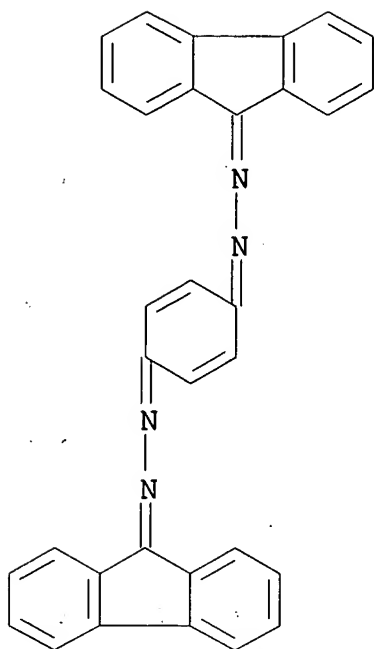
IT 801221-45-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**charge transport** material; electrophotog. photoreceptors comprising azine-based **charge transport** materials)

RN 801221-45-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, bis(9H-fluoren-9-ylidenehydrazone) (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS C07C251-88

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog photoreceptor azine **charge transport** material

IT Electrophotographic photoconductors (photoreceptors)
(electrophotog. photoreceptors comprising azine-based **charge transport** materials)

IT 801221-45-4P 801221-46-5P 801221-47-6P
801221-48-7P 801221-49-8P 801221-50-1P
801221-51-2P 801221-52-3P 801221-53-4P
801221-54-5P 801221-55-6P 801221-56-7P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**charge transport** material; electrophotog. photoreceptors comprising azine-based **charge transport** materials)

IT 5447-75-6P 13629-22-6P, 9-Fluorenone hydrazone 93376-18-2P
93519-65-4P 801221-57-8P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
PREP (Preparation); RACT (Reactant or reagent)
(prepn. of **charge transport** material)

IT 64-17-5, Ethyl alcohol, reactions 71-36-3, n-Butanol, reactions
106-51-4, 1,4-Benzoquinone, reactions 109-77-3, Malononitrile
302-01-2, Hydrazine, reactions 486-25-9, 9-Fluorenone 527-17-3,
Duroquinone 527-61-7, 2,6-Dimethyl-1,4-benzoquinone 4906-22-3,
3,3',5,5'-Tetramethyldiphenoquinone 6223-83-2, 9-Fluorenone-4-
carboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **charge transport** material)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L14 ANSWER 8 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:855504 HCAPLUS

DOCUMENT NUMBER: 139:356036

TITLE: Sulfonyldiphenylene based **charge
transport** compositions

INVENTOR(S): Law, Kam W.; Jubran, Nusrallah; Tokarski,
Zbigniew

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., USA

SOURCE: U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

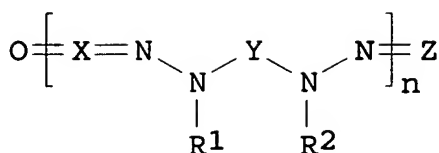
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | |
| US 2003203297 | A1 | 20031030 | US 2003-382393 | 200303 06 |
| US 6815133 | B2 | 20041109 | | |
| KR 2003081184 | A | 20031017 | KR 2003-23220 | 200304 12 |
| US 2005123848 | A1 | 20050609 | US 2004-954454 | 200409 30 |
| PRIORITY APPLN. INFO.: | | | US 2002-372293P | P 200204 12 |
| | | | US 2003-382393 | A3 |

200303

06

GI



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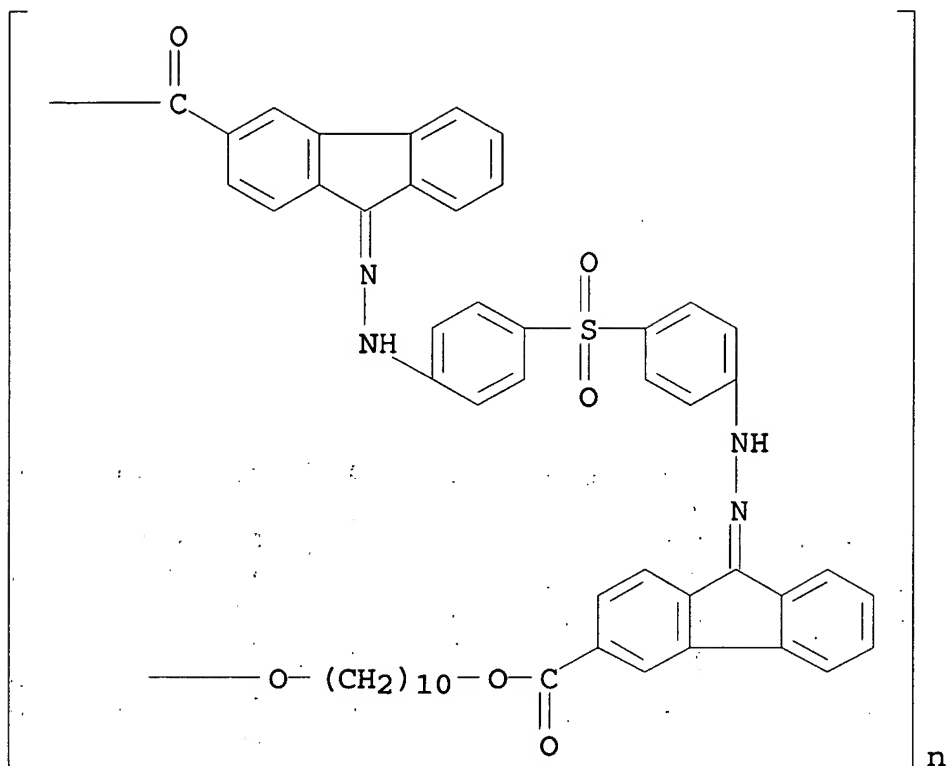
AB This invention relates to a electrophotog. organo photoreceptor that includes: (a) a **charge transport** compn. comprising mols. having the formula I ($n = 1-1000$; $\text{R1}, 2 = \text{H}$, C1-30 alkyl group, unsatd. hydrocarbon group, ether group, cycloalkyl group (e.g. a cyclohexyl group), aryl group (e.g., a Ph or naphthyl group); $\text{X} = \text{bis}(\text{fluorene-4-carboxyl})\text{alkane}$ group; $\text{Y} = \text{a divalent sulfonyldiphenylene}$ group; $\text{Z} = \text{X}=\text{O}$ where X is double-bonded to the adjacent N or two hydrogens where each hydrogen is independently single-bonded to the adjacent N; and $\text{Q} = \text{O}$, $\text{N}-\text{N}(\text{R1})-\text{Y}-\text{N}(\text{R2})-\text{NH}_2$); (b) a charge generating compd.; and (c) an elec. conductive substrate over which said **charge transport** compn. and said charge generating compd. are located.

IT 618437-88-0P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oligomeric; sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)

RN 618437-88-0 HCAPLUS

CN Poly(oxy-1,10-decanediylloxycarbonyl-9H-fluoren-3-yl-9-ylidene-2-hydrazinyl-1-ylidene-1,4-phenylenesulfonyl-1,4-phenylene-1-hydrazinyl-2-ylidene-9H-fluoren-3-yl-9-ylidenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM G03G005-047
ICS C07C251-24

INCL 430058450; 430072000; 430117000; 564251000

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog organo photoreceptor sulfonyldiphenylene
charge transport compn

IT Polysulfones, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyazomethine-polyester-; sulfonyldiphenylene based
charge transport compns. for electrophotog.
photoreceptors)

IT Polyesters, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyazomethine-polysulfone-; sulfonyldiphenylene based
charge transport compns. for electrophotog.
photoreceptors)

- IT Polyazomethines
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-polysulfone-; sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)
- IT Electrophotographic photoconductors (photoreceptors)
(sulfonyldiphenylene based **charge transport** compns. for)
- IT 618437-86-8P 618437-88-0P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oligomeric; sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)
- IT 618437-87-9P 618437-89-1P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oligomeric; sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)
- IT 575464-91-4P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)
- IT 112-47-0, 1,10-Decanediol 629-41-4, 1,8-Octanediol 7071-83-2, 9-Fluorenone-4-carbonyl chloride 14052-65-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)
- IT 575464-92-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of sulfonyldiphenylene based **charge transport** compns. for electrophotog. photoreceptors)

L14 ANSWER 9 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:626451 HCAPLUS
DOCUMENT NUMBER: 139:171235
TITLE: Electrophotographic organo-photoreceptors with
novel **charge transport** materials
INVENTOR(S): Law, Kam W.; Jubran, Nusrallah; Tokarski,
Zbigniew; Katritzky, Alan R.; Jain, Ritu;
Maimait, Rexitat
PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea
SOURCE: Eur. Pat. Appl., 1 p.

DOCUMENT TYPE:

CODEN: EPXXDW

LANGUAGE:

Patent

FAMILY ACC. NUM. COUNT:

English

PATENT INFORMATION:

1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| EP 1335250 | A1 | 20030813 | EP 2003-250767 | 20030206 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| US 2003198880 | A1 | 20031023 | US 2003-349811 | 20030122 |
| US 6905804 | B2 | 20050614 | | |
| KR 2003068044 | A | 20030819 | KR 2003-7430 | 20030206 |
| CN 1445615 | A | 20031001 | CN 2003-122659 | 20030208 |
| JP 2003270828 | A2 | 20030925 | JP 2003-32833 | 20030210 |
| JP 3704126 | B2 | 20051005 | | |
| US 2005123849 | A1 | 20050609 | US 2004-983020 | 20041105 |
| PRIORITY APPLN. INFO.: | | | US 2002-355018P | P 20020208 |
| | | | US 2002-355019P | P 20020208 |
| | | | US 2002-355047P | P 20020208 |
| | | | US 2002-355060P | P |

200202
08

US 2002-355066P P

200202
08

US 2002-355073P P

200202
08

US 2002-355079P P

200202
08

US 2002-355080P P

200202
08

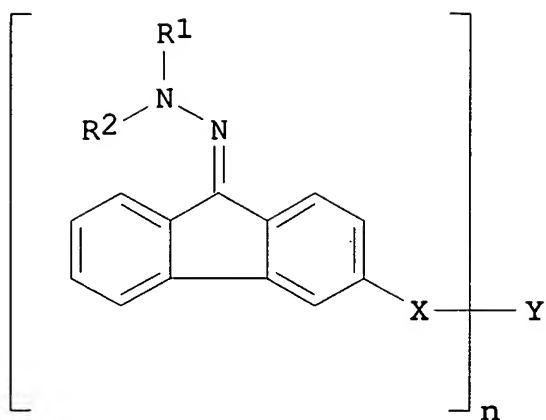
US 2002-355228P P

200202
08

US 2003-349811 A3

200301
22OTHER SOURCE(S) :
GI

MARPAT 139:171235



I

AB This invention relates to a novel organo-photoreceptor comprising:
 (a) at least one **charge transport** material comprising a fluorenone hydrazone having a combination of groups thereon, the combination of groups being selected from the group consisting of (a) at least two fluorenone alkylsulfonylphenylhydrazone groups, (b) at least two fluorenone pyrrolylhydrazone groups, (c) at least two fluorenone benzotriazolylhydrazone groups, (d) at least two fluorenone sulfolanylhydrazone groups, (e) at least two fluorenone pyrazolylhydrazone groups, (f) at least two fluorenone naphthylhydrazone groups, (g) at least two fluorenone tetrazolylhydrazone groups, (h) at least two fluorenone stilbenylhydrazone groups, and (i) at least two fluorenone (9H-fluoren-9-ylidene)benzylhydrazone groups. Some of these fluorenones may be represented by the formula I ($n = \text{integer } 2-6$; $R_1 = \text{hydrogen, an alkyl group, aryl group}$; $R_3 = \text{alkylsulfonylphenyl}$; $X = \text{linking group having the formula } -(\text{CH}_2)_m-$, branched or linear; $m = \text{integer } 0-20$; $Y = \text{bond, C, N, O, etc.}$). The compds. may form electrostatic imaging systems in combination with (b) a charge generating compd.; and (c) an elec. conductive substrate.

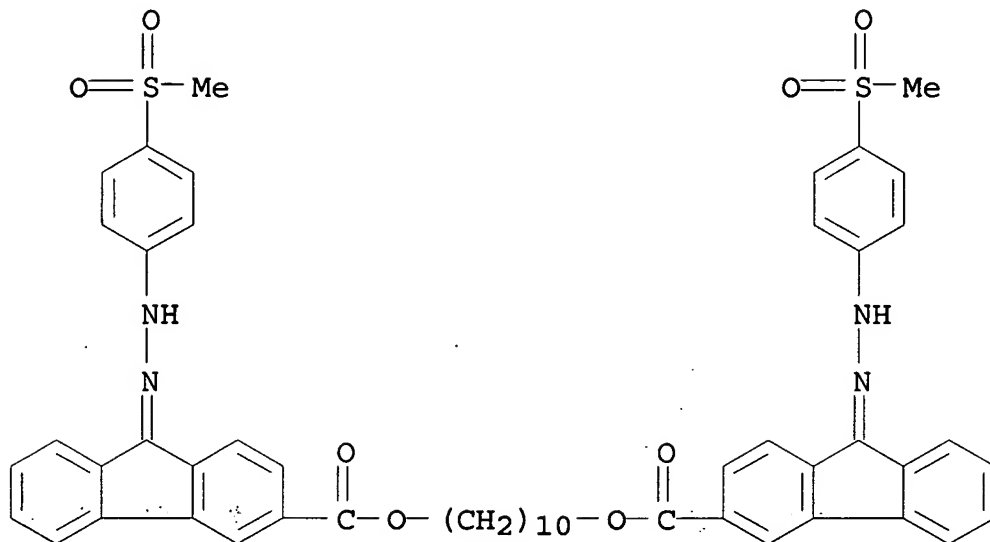
IT 575464-93-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (charge transport materials in electrophotog. photoreceptor)

RN 575464-93-6 HCAPLUS

CN 9H-Fluorene-3-carboxylic acid, 9-[[4-(methylsulfonyl)phenyl]hydrazon

o]-, 1,10-decanediyl ester (9CI) (CA INDEX NAME)



- IC ICM G03G005-06
ICS C07D333-48; C07C251-84; C07C317-34; C07D249-18; C07D231-38;
C07D257-06; C07D207-34
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
- ST electrophotog photoreceptor **charge transport**
- IT Electrophotographic photoconductors (photoreceptors)
(electrophotog. organo-photoreceptors with novel **charge
transport** materials)
- IT 71-36-3, Butanol, reactions 94-97-3, 5-Chlorobenzotriazole
100-63-0, Phenylhydrazine 109-77-3, Malononitrile 112-47-0,
1,10-Decanediol 482-05-3, Diphenic acid 629-41-4, 1,8-Octanediol
1229-71-6 4714-23-2, p-Chlorostilbene 17852-67-4,
4-(Methylsulfonyl)phenylhydrazine hydrochloride 28452-93-9,
Butadiene sulfone 32907-54-3 53455-99-5 73788-51-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(**charge transport** materials in electrophotog.
photoreceptor)
- IT 14530-12-2P 17473-80-2P 38570-92-2P 88104-40-9P 96063-03-5P
152032-40-1P 211243-79-7P 496044-70-3P 496044-71-4P
575464-90-3P 575464-91-4P 575464-92-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(**charge transport** materials in electrophotog.

photoreceptor)

IT 575464-93-6P 575464-94-7P 575464-95-8P
575464-96-9P 575464-97-0P 575464-98-1P
575464-99-2P 575465-00-8P 575465-01-9P
575465-02-0P 575465-03-1P 575465-04-2P
575465-05-3P 575465-06-4P 575465-07-5P
575465-08-6P 575465-09-7P 575465-10-0P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(charge transport materials in electrophotog.
photoreceptor)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L14 ANSWER 10 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:373831 HCAPLUS

DOCUMENT NUMBER: 138:376371

TITLE: Electrophotographic organophotoreceptors
containing bis(fluorenyl)-1,1'-(sulfonyldi-4,1-
phenylene)bishydrazones as **charge-
transporting** agents

INVENTOR(S): Law, Kam W.; Jubran, Nusrullah; Tokarski,

Zbigniew; Katritzky, Alan R.; Jain, Ritu

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| EP 1310483 | A1 | 20030514 | EP 2002-257675 | 20021106 |
| EP 1310483 | B1 | 20060222 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | | |
| US 2003138712 | A1 | 20030724 | US 2002-289233 | 20021106 |
| US 6696209 | B2 | 20040224 | | |

| | | | | |
|------------------------|----|----------|-----------------|-------------------|
| KR 2003039311 | A | 20030517 | KR 2002-69417 | 200211 09 |
| CN 1430105 | A | 20030716 | CN 2002-154234 | 200211 09 |
| JP 2003202688 | A2 | 20030718 | JP 2002-327099 | 200211 11 |
| JP 3724738 | B2 | 20051207 | | |
| PRIORITY APPLN. INFO.: | | | US 2001-336999P | P 200111 09 |

OTHER SOURCE(S): MARPAT 138:376371

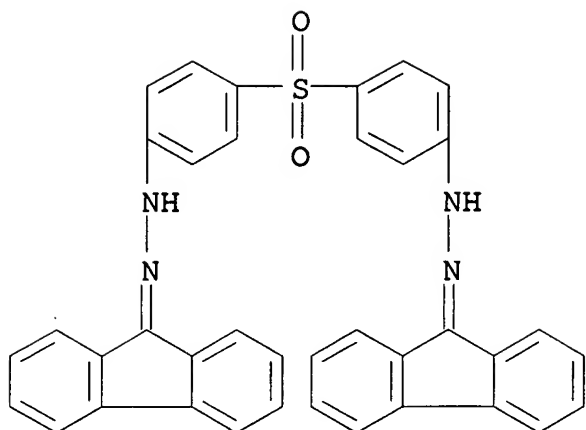
AB An electrophotog. photoreceptor is characterized by contg. a **charge-transporting** agent having formula $R1C:NN(R3)XN(R4)N:CR2$ ($R1, R2$ = fluorenyl group or deriv. thereof; $R3, R4$ = H, alkyl, aryl, heterocyclic group; X = sulfonyldiphenylene group or deriv. thereof). The electrophotog. photoreceptor comprises (a) the **charge-transporting** agent, (b) a charge-generating compd., and (c) an elec. conductive substrate.

IT 524724-56-9P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
PREP (Preparation); USES (Uses)
(bis(fluorenyl)-1,1'-(sulfonyldi-4,1-phenylene)bishydrazone-
contg. **charge-transporting** agents for
photoreceptors).

RN 524724-56-9 HCAPLUS

CN 9H-Fluoren-9-one, (sulfonyldi-4,1-phenylene)dihydrazone (9CI) (CA
INDEX NAME)



- IC ICM C07C317-34
ICS G03G005-06
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST electrophotog photoreceptor bis fluorenyl sulfonyldiphenylene bishydrazone **charge transporting agent**
- IT Electrophotographic photoconductors (photoreceptors)
(electrophotog. organophotoreceptors contg. bis(fluorenyl)-1,1'-(sulfonyldi-4,1-phenylene)bishydrazones as **charge-transporting agents**)
- IT 524724-56-9P 524724-57-0P 524724-58-1P
524724-59-2P
RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
PREP (Preparation); USES (Uses)
(bis(fluorenyl)-1,1'-(sulfonyldi-4,1-phenylene)bishydrazone-contg. **charge-transporting agents** for photoreceptors)
- IT 94302-83-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of bis(fluorenyl)-1,1'-(sulfonyldi-4,1-phenylene)bishydrazone-contg. **charge-transporting agents**)
- IT 71-41-0, n-Amyl alcohol, reactions 486-25-9, 9-Fluorenone
7071-83-2, 9-Fluorenone-4-carbonyl chloride 14052-65-4
18158-43-5, 2-Dimethylamino-9-fluorenone 93519-67-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of bis(fluorenyl)-1,1'-(sulfonyldi-4,1-phenylene)bishydrazone-contg. **charge-**

transporting agents)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L14 ANSWER 11 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:169080 HCAPLUS
DOCUMENT NUMBER: 112:169080
TITLE: Electrophotographic photoreceptors containing a
bisazo compound carrier-generating agent
INVENTOR(S): Kono, Toshio; Suda, Osamu; Umezaki, Tetsuhiro;
Hasegawa, Masaru; Tanaka, Norio; Sekino,
Toshifumi
PATENT ASSIGNEE(S): Dainichiseika Color and Chemicals Mfg. Co.,
Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 01180554 | A2 | 19890718 | JP 1988-3740 | 198801 13 |
| PRIORITY APPLN. INFO.: | | | JP 1988-3740 | 198801 13 |

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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Electrophotog. photoreceptors have a photosensitive layer contg. a
bisazo compd. I [R = arom. cyclic group Q1, naphthalene group Q2; X
= (substituted) arom. cyclic hydrocarbon or arom. heterocycle; R2 =
NR3R4, NHNR5R6, NHN:CR7R8; R3-8 = H, (substituted) alkyl, aryl,
aralkyl, heterocycle; N or C may form a ring with R3-4, R5-6, or
R7-8; R1 = H, halo, CN, NO2, (substituted) alkyl, alkoxy, amino; n =

0-5]. The photoreceptors exhibit good electrophotog. properties and durability. Thus, an Al substrate was coated with a compn. contg. bisazo pigment II and Vylon 200 (polyester resin) and overcoated with a compn. contg. p-diethylaminobenzaldehyde-N-phenyl-N-benzylhydrazone and Panlite L-1250 (polycarbonate resin) to give a photoreceptor. The initial potential, potential retentivity after 10 s in the dark, and exposure required to halve the retained potential were -870 V, 89%, and 2.3 lx-s, resp.

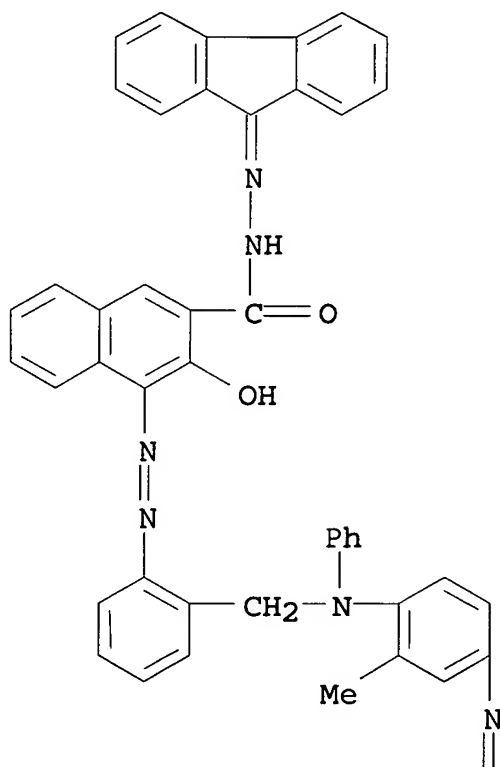
IT 126203-61-0

RL: TEM (Technical or engineered material use); USES (Uses)
(charge-generating agent, for electrophotog. photoconductor)

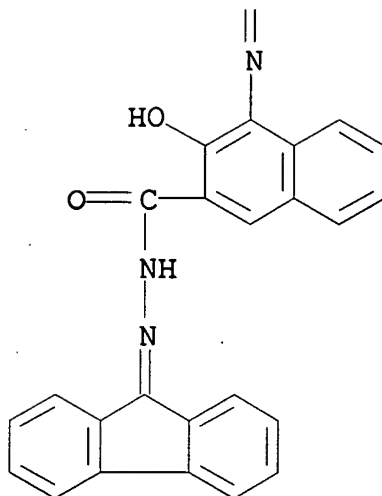
RN 126203-61-0 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4-[[[2-[[[4-[[3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-1-naphthalenyl]azo]-2-methylphenyl]phenylamino]methyl]phenyl]azo]-3-hydroxy-, 9H-fluoren-9-ylidenehydrazide (9CI) (CA INDEX NAME)

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IC ICM G03G005-06
ICS C09B035-039

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25

IT 126203-49-4 126203-50-7 126203-51-8 126203-52-9 126203-53-0
126203-54-1 126203-55-2 126203-56-3 126203-57-4 126203-58-5
126203-59-6 126203-60-9 **126203-61-0** 126203-62-1
126203-63-2 126203-64-3 126203-65-4 126203-66-5 126245-55-4
126245-56-5 126245-57-6 126245-58-7

RL: TEM (Technical or engineered material use); USES (Uses)
(charge-generating agent, for electrophotog. photoconductor)

IT 32444-53-4, 2,5-Bis(p-N,N-dimethylaminophenyl)-1,3,4-oxadiazole
73276-70-7 73276-71-8, p-Diethylaminobenzaldehyde-N-phenyl-N-benzylhydrazone

RL: USES (Uses)
(**charge-transporting** agent, for
electrophotog. photoconductor contg. bisazo compd.)

L14 ANSWER 12 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:104883 HCAPLUS

DOCUMENT NUMBER: 110:104883

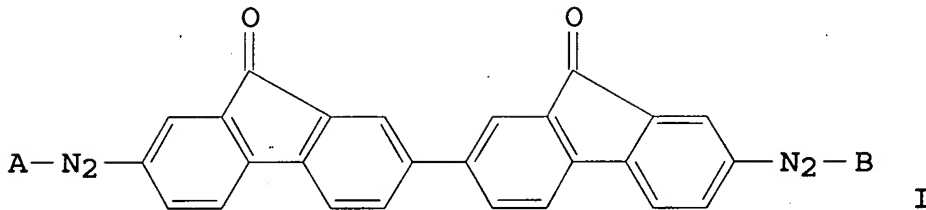
TITLE: Electrophotographic photoreceptor containing
disazo pigment

INVENTOR(S): Takai, Hideyuki; Kikuchi, Norihiro

PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 63148266 | A2 | 19880621 | JP 1986-294718 | 198612 12 |
| PRIORITY APPLN. INFO.: | | | JP 1986-294718 | 198612 12 |

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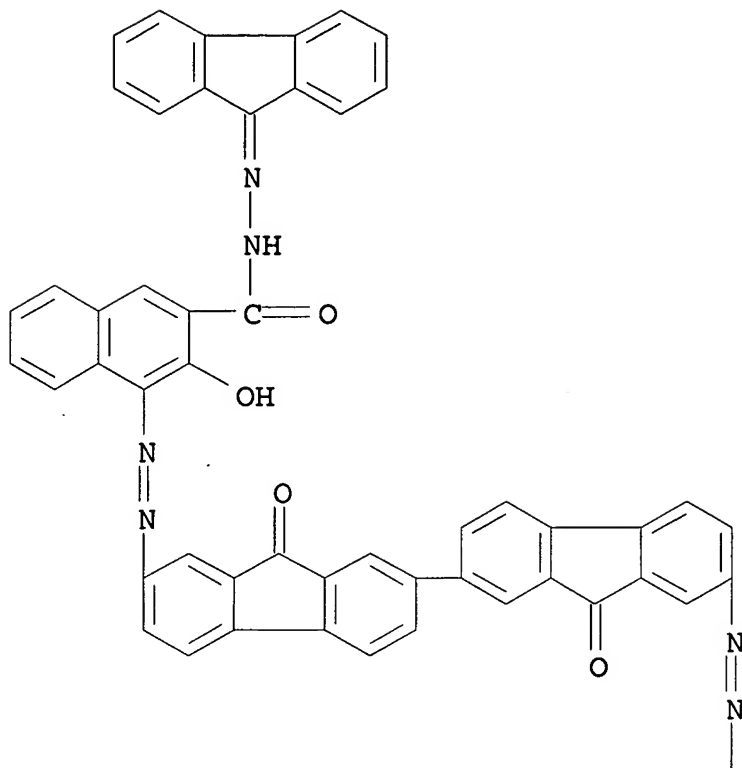
AB A photosensitive layer of the title photoreceptor contains a disazo pigment I (A, B = coupler moiety contg. phenolic OH), for improvement of **charge** generation and **transportation** improvement.

IT 118524-33-7
 RL: USES (Uses)
 (disazo pigment, electrophotog. photoreceptor contg.)

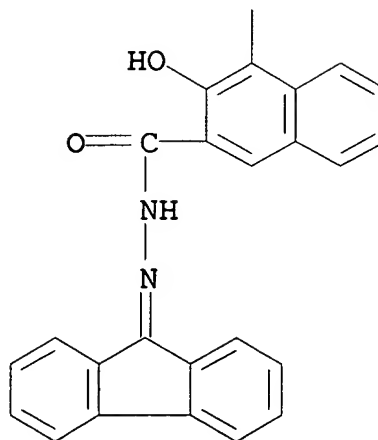
RN 118524-33-7 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(9,9'-dioxo[2,2'-bi-9H-fluorene]-7,7'-diyl)bis(azo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



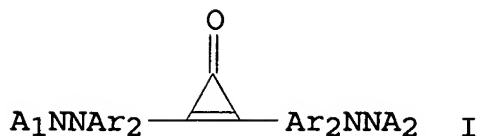
IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 118524-25-7 118524-26-8 118524-27-9 118524-28-0 118524-29-1
118524-30-4 118524-31-5 118524-32-6 118524-33-7
118524-34-8 118524-35-9 118524-36-0 118524-37-1 118524-38-2
118524-39-3 118524-40-6 118524-41-7 118524-42-8 118524-43-9
118524-44-0 118524-45-1 118543-13-8 118543-14-9 118543-15-0
118543-16-1 118543-17-2 119099-96-6
RL: USES (Uses)
(disazo pigment, electrophotog. photoreceptor contg.)

L14 ANSWER 13 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:66840 HCAPLUS
DOCUMENT NUMBER: 110:66840
TITLE: Electrophotographic photoreceptor containing
disazo pigment in photoconductor layer
INVENTOR(S): Matsumoto, Masakazu; Ishikawa, Shozo
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| JP 63108341 | A2 | 19880513 | JP 1986-253849 | 198610 27 |
| JP 08003642 | B4 | 19960117 | JP 1986-253849 | 198610 27 |

PRIORITY APPLN. INFO.:

GI



AB The title photoreceptor contains a disazo pigment of the formula (I) (Ar₁, Ar₂ = divalent arom. or heterocyclic arom. moiety capable of having substituents; A₁, A₂ = a coupler moiety having phenolic OH) in a photoconductor layer comprising charge-generating and **charge-transporting** layers. Preferably, the pigment is contained in the charge-generating layer. The disazo pigment gives high carrier generation efficiency.

IT 118666-85-6

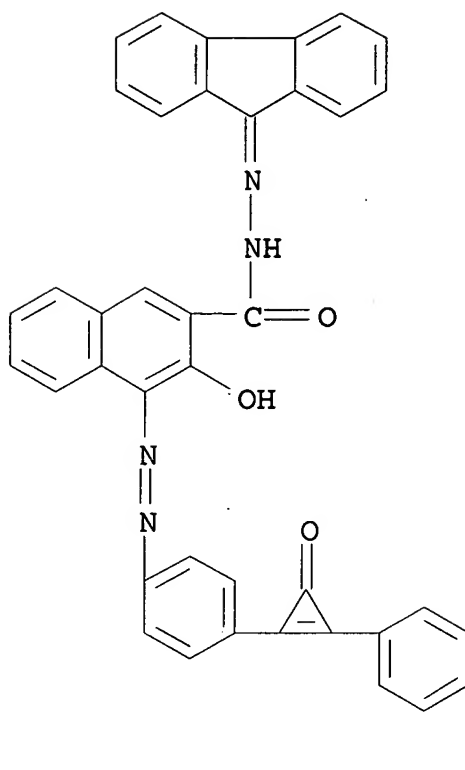
RL: USES (Uses)

(charge-generating layer contg., in electrophotog. photoreceptor)

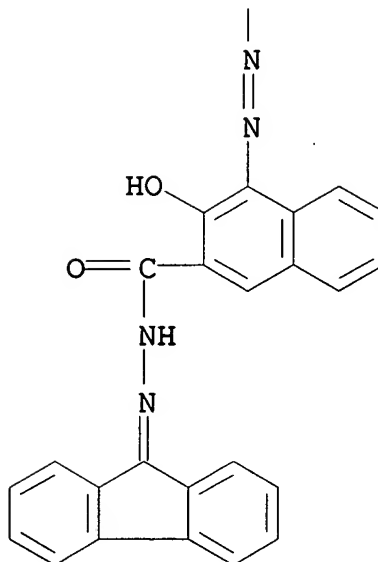
RN 118666-85-6 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(3-oxo-1-cyclopropene-1,2-diyl)bis(4,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



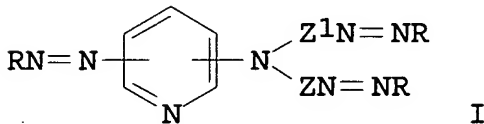
IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 118666-36-7 118666-47-0 118666-48-1 118666-49-2 118666-50-5
118666-51-6 118666-52-7 118666-53-8 118666-54-9 118666-55-0
118666-75-4 118666-76-5 118666-77-6 118666-78-7 118666-79-8
118666-80-1 118666-81-2 118666-82-3 118666-83-4 118666-84-5
118666-85-6 118666-86-7 118666-87-8 118666-88-9
118666-89-0 118666-90-3 118666-91-4 118666-92-5 118666-93-6
RL: USES (Uses)
(charge-generating layer contg., in electrophotog. photoreceptor)

L14 ANSWER 14 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:580363 HCAPLUS
DOCUMENT NUMBER: 109:180363
TITLE: Electrophotographic photoreceptors containing
trisazo pigments
INVENTOR(S): Matsumoto, Masakazu; Takiguchi, Takao; Takai,
Hideyuki
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. ----- | KIND ---- | DATE ----- | APPLICATION NO. ----- | DATE |
|------------------------|--------------|---------------|--------------------------|-------------------|
| JP 63027850 | A2 | 19880205 | JP 1986-172580 | 198607 22 |
| JP 04080386 | B4 | 19921218 | | |
| US 4810607 | A | 19890307 | US 1987-73221 | 198707 14 |
| PRIORITY APPLN. INFO.: | | | JP 1986-172580 | A 198607 22 |

GI



AB The title electrophotog. photoreceptors contain a trisazo pigment I (Z, Z1 = divalent pyridine moiety, arylene; R = phenolic OH group-contg. coupler moiety). The photoreceptors show good sensitivity toward visible and near IR light and hence can be used in conventional copying machines and semiconductor laser printers.

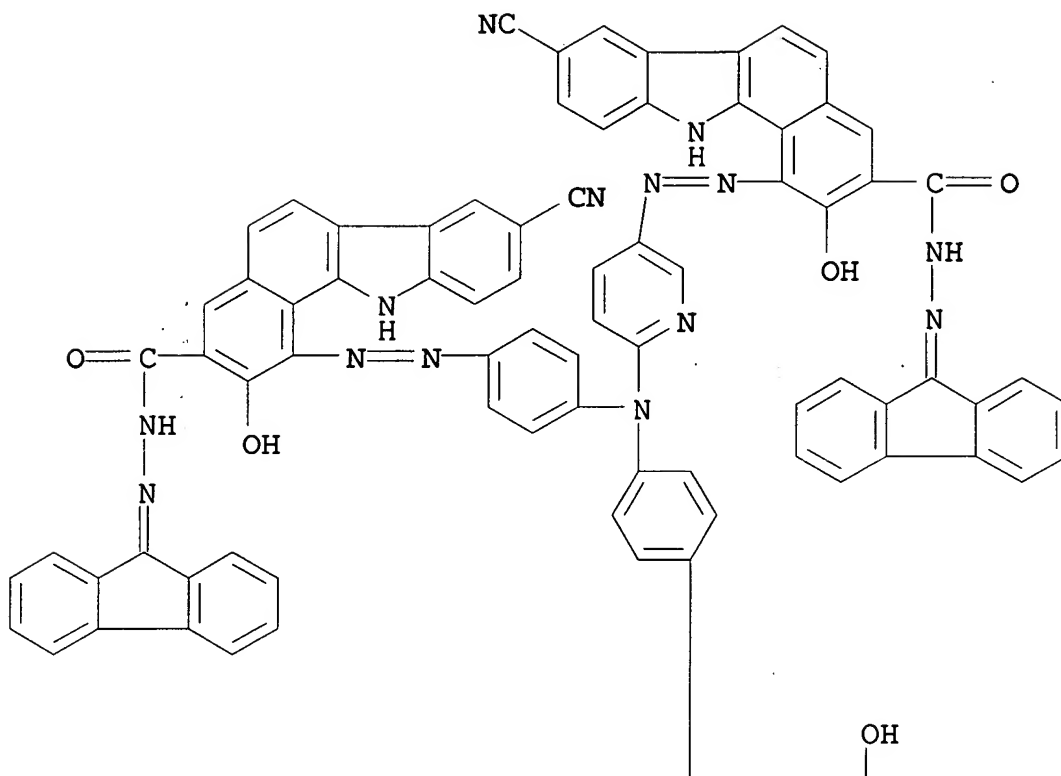
IT 116995-09-6

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)

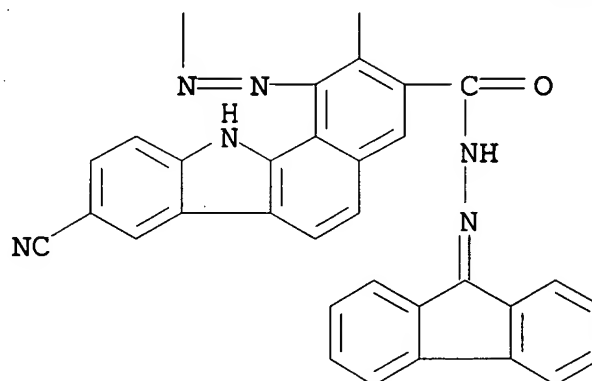
RN 116995-09-6 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxylic acid, 1,1'-[[[5-[[8-cyano-3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-11H-benzo[a]carbazol-1-yl]azo]-2-pyridinyl]imino]bis(4,1-phenyleneazo)]bis[8-cyano-2-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A



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IC ICM G03G005-06

MEI HUANG EIC1700 REM4B28 571-272-3952

03/03/2006

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 116994-99-1 116995-00-7 116995-01-8 116995-02-9 116995-03-0
116995-04-1 116995-05-2 116995-06-3 116995-07-4 116995-08-5
116995-09-6 116995-10-9 116995-11-0 116995-12-1
116995-13-2 116995-14-3 116995-15-4 116995-16-5 116995-17-6
117008-58-9 117008-59-0 117008-60-3 117008-61-4 117008-62-5
117008-63-6 117008-64-7 117008-65-8 117008-66-9 117008-67-0
117008-68-1 117008-69-2 117008-70-5 117008-71-6 117008-72-7
117008-73-8 117008-74-9 117008-75-0 117008-76-1 117008-77-2
117008-78-3 117008-79-4 117008-80-7 **117008-81-8**
117008-82-9 117008-84-1 117008-85-2 117036-80-3 117036-81-4
117036-82-5 117036-83-6 117036-84-7 117036-85-8 117539-81-8

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)

IT 129-79-3, 2,4,7-Trinitro-9-fluorenone 25067-59-8,
Poly(N-vinylcarbazole) 74677-70-6 83890-47-5 89115-10-6
90884-11-0

RL: USES (Uses)
(electrophotog. **charge carrier-transporting**
agent)

L14 ANSWER 15 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:29377 HCAPLUS

DOCUMENT NUMBER: 108:29377

TITLE: Electrophotographic photoreceptors

INVENTOR(S): Matsumoto, Masakazu; Umehara, Masashige;
Takiguchi, Takao; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 151 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

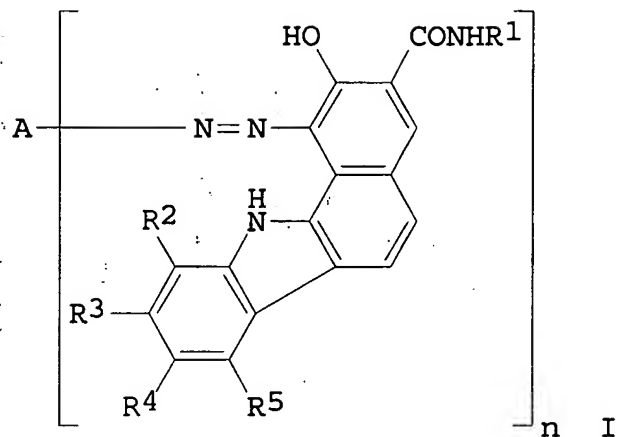
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 62147463 | A2 | 19870701 | JP 1985-288179 | 198512 20 |
| JP 05049229 | B4 | 19930723 | | |
| PRIORITY APPLN. INFO.: | | | JP 1985-288179 | 198512 |

GI



AB The claimed electrophotog. photoreceptor contains a compd. of the formula I (A = an arom. or heterocyclic moiety; R1 = alkyl, aryl, aralkyl, N:CR6R7; R2-R5 = H, halo, OH, NO2, CF3, CN, alkyl, alkoxy, aryl, aralkyl, NH2; R6, R7 = H, alkyl, aralkyl, heterocyclyl; R2R3, R3R4, R4R5, and R6R7 in combination may form rings; n = 2-4). The photoreceptor shows excellent sensitivity in the visible and near IR region; hence it is useful for laser printers and copiers.

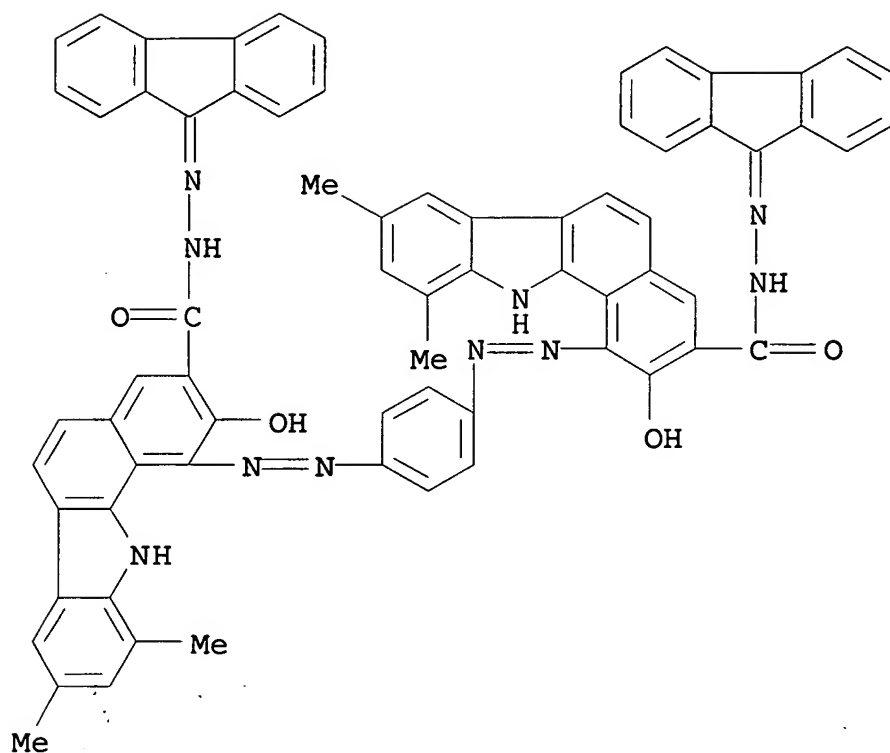
IT 111785-34-3

RL: USES (Uses)

(electrophotog. charge carrier generating pigments)

RN 111785-34-3 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxylic acid, 1,1'-[1,4-phenylenebis(azo)]bis[2-hydroxy-8,10-dimethyl-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)



| | | | | | |
|----|---|--------------------|-------------|-------------|-------------|
| IC | ICM G03G005-06 | | | | |
| CC | 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes) | | | | |
| IT | 111785-00-3 | 111785-01-4 | 111785-02-5 | 111785-03-6 | 111785-04-7 |
| | 111785-05-8 | 111785-06-9 | 111785-07-0 | 111785-08-1 | 111785-09-2 |
| | 111785-10-5 | 111785-11-6 | 111785-12-7 | 111785-13-8 | 111785-14-9 |
| | 111785-15-0 | 111785-16-1 | 111785-17-2 | 111785-18-3 | 111785-19-4 |
| | 111785-20-7 | 111785-21-8 | 111785-22-9 | 111785-23-0 | 111785-24-1 |
| | 111785-25-2 | 111785-26-3 | 111785-27-4 | 111785-28-5 | 111785-29-6 |
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| 111843-99-3 | 111844-00-9 | 111844-01-0 | 112100-00-2 | |

RL: USES (Uses)

(electrophotog. charge carrier generating pigments)

IT 129-79-3, 2,4,7-Trinitrofluorenone 25067-59-8,
Poly(N-vinylcarbazole) 74677-70-6 83890-47-5 90884-11-0
91175-21-2

RL: USES (Uses)

(electrophotog. **charge carrier-transporting**
agent)

L14 ANSWER 16 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:431162 HCAPLUS

DOCUMENT NUMBER: 107:31162

TITLE: Photosensitive recording material for
electrophotographyINVENTOR(S): Yamashita, Masataka; Takiguchi, Takao; Umehara,
Shoji; Matsumoto, Masakazu; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Ger. Offen., 218 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO.

DATE

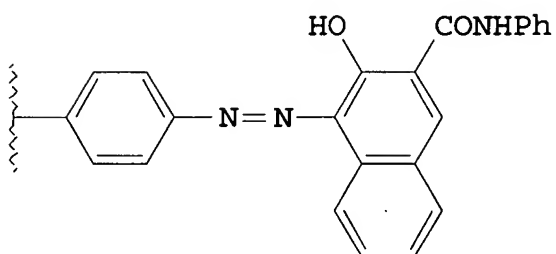
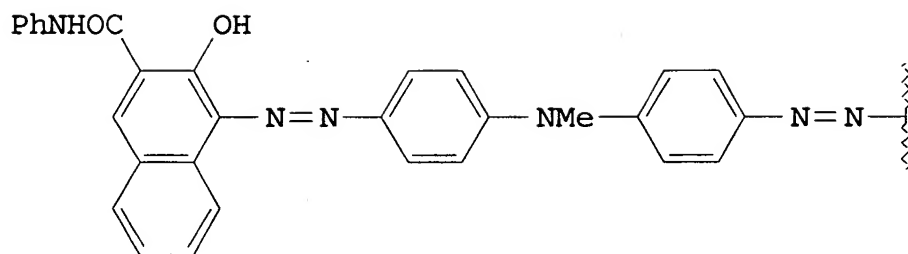
MEI HUANG EIC1700 REM4B28 571-272-3952

03/03/2006

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| JP 04002944 JP 61251861 | B4 A2 | 19920121 19861108 | JP 1985-69721 | 198504 02 |
| JP 03069104 JP 61251864 | B4 A2 | 19911030 19861108 | JP 1985-90452 | 198504 26 |
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| JP 03070217 JP 61260250 | B4 A2 | 19911106 19861118 | JP 1985-101513 | 198505 15 |
| JP 03070218 JP 61269164 | B4 A2 | 19911106 19861128 | JP 1985-110097 | 198505 24 |
| JP 04017428 US 4743523 | B4 A | 19920325 19880510 | US 1986-844887 | 198603 27 |
| GB 2176019 | A1 | 19861210 | GB 1986-8077 | 198604 02 |
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|----------------|---|--------------|
| JP 1985-69722 | A | 198504 02 |
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| JP 1985-92286 | A | 198505 01 |
| JP 1985-101513 | A | 198505 15 |
| JP 1985-110097 | A | 198505 24 |

GI



I

AB Composite electrophotog. photoreceptors having outstanding

sensitivity and durability contain a charge carrier-generating layer contg. an azo pigment of the formula $R_1N:NZ(N:NZ)nNRZN:NZN:NR_1$, $R_1N:NZNRZN:NR_1$, $R_1N:NZCH:CHZNRZN:NZN:NR_1$, $R_1N:NZ(CH:CHZ)nNRZCH:CHZN:NR_1$, $R_1N:NZNRZNRZN:NR_1$, or $R_1N:NZN(ZN:NR_1)ZNR_2ZN:NR_1$ (R = alkyl, aralkyl, aryl, or acyl; R₁ = a coupling component contg. a phenolic OH group; R₂ = H, nitroso, or R; Z = arylene or a divalent heterocyclic group). A casein-coated Al plate was coated with a dispersion contg. I, poly(vinyl butyral), and EtOH and dried to give a charge carrier-generating layer and then with a soln. contg. p-diethylaminobenzaldehyde N-(1-naphthyl)-N-phenylhydrazone, poly(Me methacrylate), and benzene to give a **charge-transporting** layer to give a photoreceptor that showed a surface potential of -580 V and a half-decay exposure photosensitivity of 4.0 lx-s when given a static corona charge of -5 kV.

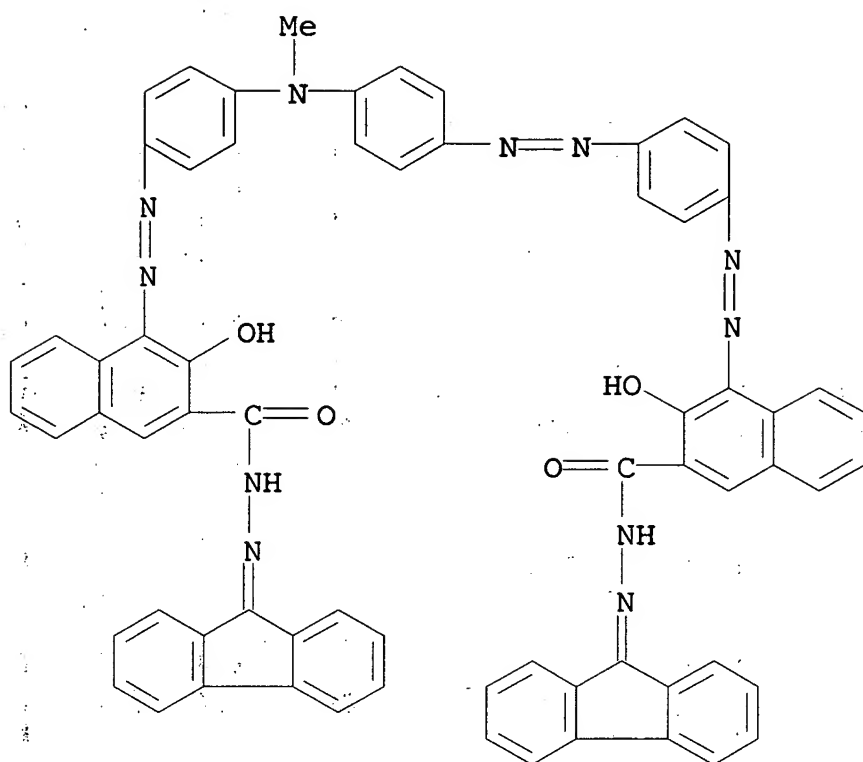
IT 107789-28-6

RL: USES (Uses)

(electrophotog. composite photoreceptor with charge carrier-generating layer contg.)

RN 107789-28-6 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4-[[4-[[4-[[4-[[3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-1-naphthalenyl]azo]phenyl]azo]phenyl]methyamino]phenyl]azo]-3-hydroxy-, 9H-fluoren-9-ylidenehydrazide (9CI) (CA INDEX NAME)



IC ICM G03G005-06
 ICS G03G005-14; C09B035-56; C09B035-378; C09B035-36; C09B035-023
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
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RL: USES (Uses)

(electrophotog. composite photoreceptor with charge carrier-generating layer contg.)

L14 ANSWER 17 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:224445 HCAPLUS

DOCUMENT NUMBER: 106:224445

TITLE: Electrophotographic charge-generating
azo-photoconductorsINVENTOR(S): Matsumoto, Masakazu; Umehara, Masashige;
Takiguchi, Takao; Yamashita, Masataka; Ishikawa,
Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|------------|
| JP 61260251 | A2 | 19861118 | JP 1985-101514 | 19850515 |
| JP 03070221 | B4 | 19911106 | | |
| US 4735882 | A | 19880405 | US 1986-846900 | 19860401 |
| PRIORITY APPLN. INFO.: | | | JP 1985-69723 | A 19850402 |
| | | | JP 1985-69724 | A 19850402 |
| | | | JP 1985-90453 | A 19850426 |
| | | | JP 1985-101514 | A 19850515 |

AB The azo compds. have the formula (A-N:NZ1CH:CHZ2)N[(Z3N:N)nZ4N:N-A](Z5N:NZ6N:N-A) (I) or (A-N:NZ7CH:CHZ8)N(Z9CH:CHZ10N:N-A)(Z11N:NZ12N:N-A) (Z1-Z12 = arylene, heterocyclene; A = coupler residue having phenolic OH group; n = 0, 1). A photoconductor was prepd. by dispersing in poly(vinyl butyral) binder an azo compd. of the formula I (Z1 = Z2 = Z4 = Z5 = Z6 = 1,4-phenylene; n = 0; A = coupler residue from naphthol AS) to give a charge-generating layer and dispersing in PMMA binder a hydrazone compd. to form a charge-transporting layer.

IT 108526-00-7

RL: USES (Uses)

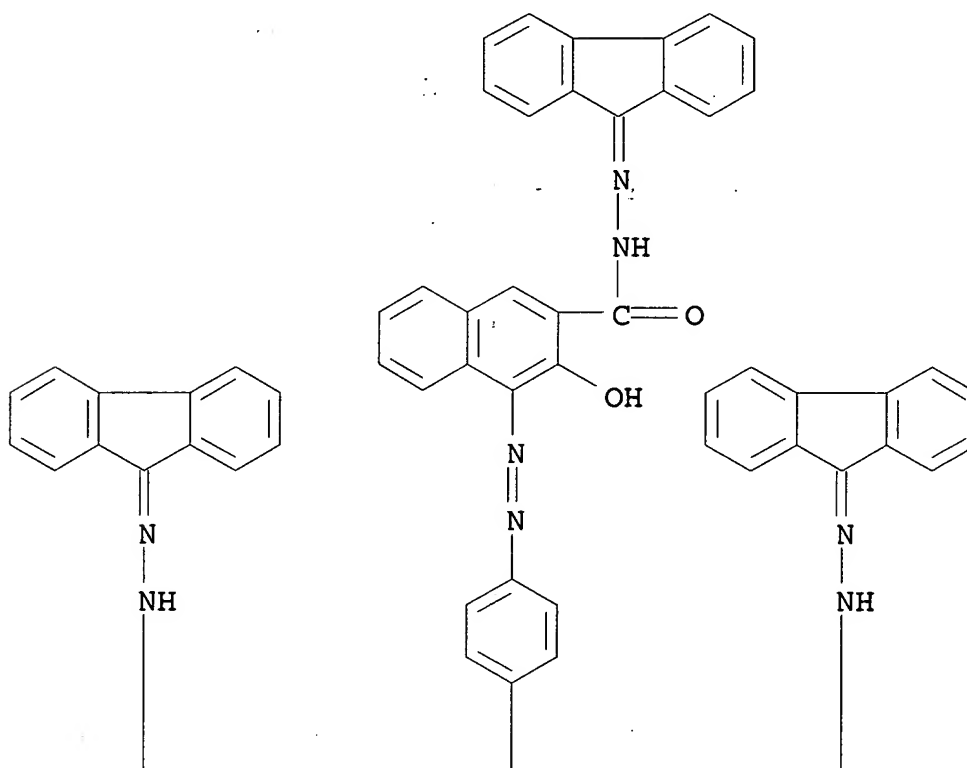
(electrophotog. photoconductor with charge-generating azo compd.)

from, with improved sensitivity and stability for repeated uses)

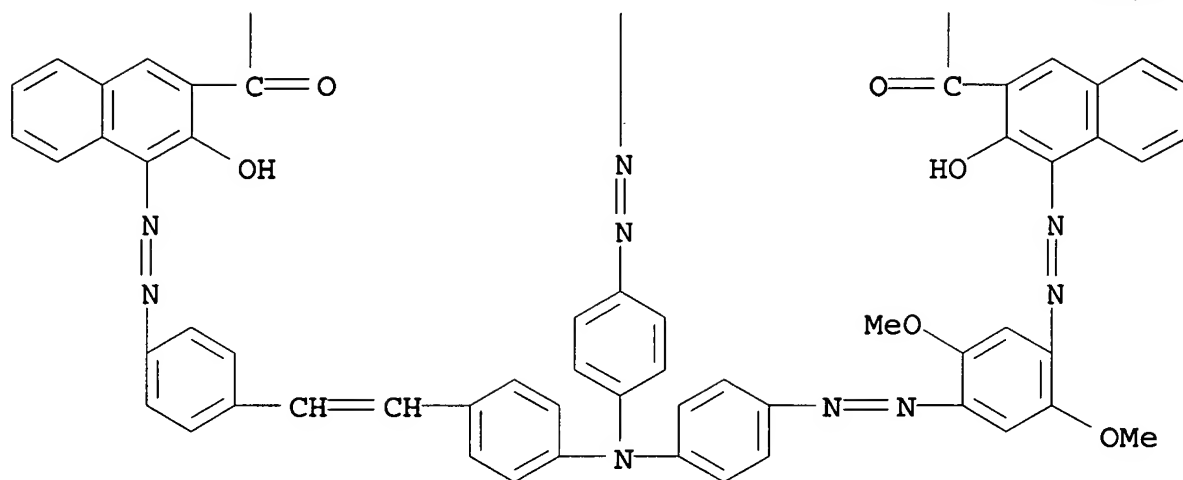
RN 108526-00-7 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 3-hydroxy-4-[[4-[2-[4-[[4-[[4-[[3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-1-naphthalenyl]azo]-2,5-dimethoxyphenyl]azo]phenyl][4-[[4-[[3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-1-naphthalenyl]azo]phenyl]azo]phenyl]amino]phenyl]ethenyl]phenyl]azo]-, 9H-fluoren-9-ylidenehydrazide (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 108525-90-2 108525-91-3 108525-92-4 108525-93-5 108525-94-6
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 RL: USES (Uses)
 (electrophotog. photoconductor with charge-generating azo compd.
 from, with improved sensitivity and stability for repeated uses)

L14 ANSWER 18 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:186429 HCAPLUS

DOCUMENT NUMBER: 106:186429

TITLE: Electrophotographic photoreceptors containing charge-generating disazo compounds

INVENTOR(S): Matsumoto, Masakazu; Takiguchi, Takao; Umehara, Masashige; Yamashita, Masataka; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| JP 61275850 | A2 | 19861205 | JP 1985-119116 | 19850531 |
| JP 04017426 | B4 | 19920325 | | |
| US 4702982 | A | 19871027 | US 1986-865849 | 19860522 |
| | | | JP 1985-119116 | 19850531 |
| | | | JP 1985-118978 | 19850603 |
| | | | JP 1985-122757 | 19850607 |

PRIORITY APPLN. INFO.:

AB The disazo compd. has the formula (AN:NZ1)N(NH) (Z2N:NA) (I; A = coupler residue having a phenolic OH group; Z1, Z2 = phenylene, polynuclear arylene, heterocyclylene). The photoreceptor was prepd. by dispersing in a poly(vinyl butyral) binder a disazo compd. of the formula I (Z1 = 1,4-naphthylene; Z2 = 1,4-phenylene; A = coupler residue from 3-hydroxy-2-naphthoic acid anilide) to give a charge-generating layer and dispersing in a PMMA binder a hydrazone compd. to form a **charge-transport** layer. The photoreceptor shows improved sensitivity and stability.

IT 108079-63-6

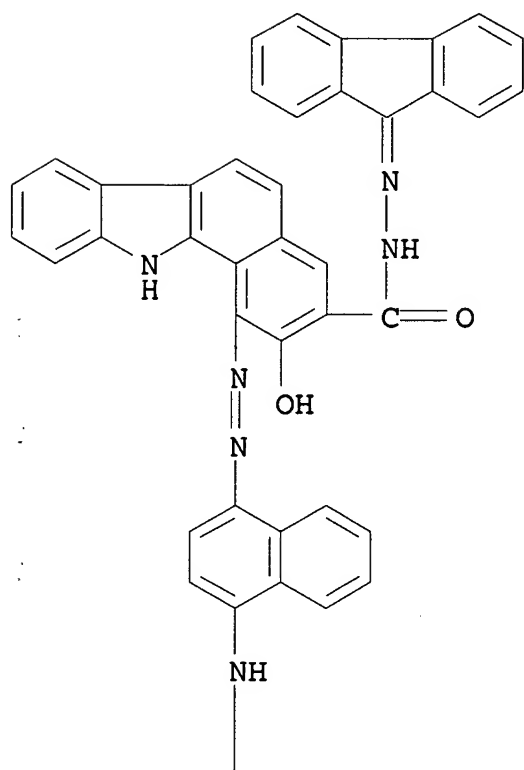
RL: USES (Uses)

(electrophotog. photoreceptor contg. charge-generating compd. from, with improved sensitivity and stability)

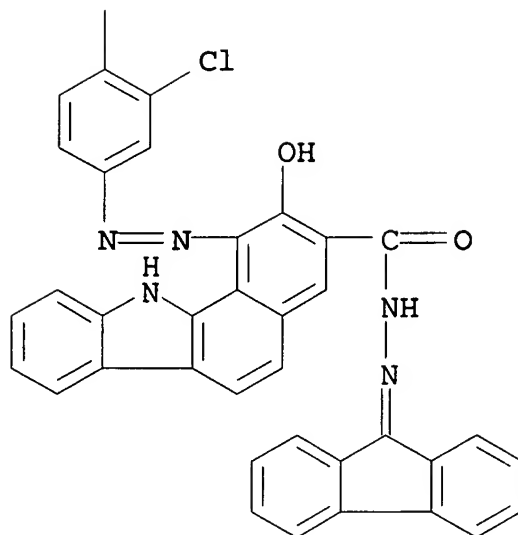
RN 108079-63-6 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxylic acid, 1-[[3-chloro-4-[[4-[[3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-11H-benzo[a]carbazol-1-yl]azo]-1-naphthalenyl]amino]phenyl]azo]-2-hydroxy-, 9H-fluoren-9-ylidenehydrazide (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 108079-61-4 108079-62-5 **108079-63-6** 108079-64-7
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108118-23-6

RL: USES (Uses)

(electrophotog. photoreceptor contg. charge-generating compd.
from, with improved sensitivity and stability)

L14 ANSWER 19 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:186428 HCAPLUS

DOCUMENT NUMBER: 106:186428

TITLE: Electrophotographic photoreceptors containing
charge-generating disazo compoundsINVENTOR(S): Matsumoto, Masakazu; Yamashita, Masataka;
Miyazaki, Hajime

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokyo Koho, 32 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: Japanese
 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| JP 61275849 | A2 | 19861205 | JP 1985-119115 | 19850531 |
| JP 04017425 | B4 | 19920325 | JP 1985-119115 | 19850531 |

PRIORITY APPLN. INFO.:

AB The charge-generating agent has the formula (AN:NZ1)N(NO) (Z2N:NA) (I; A = coupler residue having a phenolic OH group; Z1, Z2 = phenylene, polynuclear arylene, heterocyclene). A photoreceptor was prepd. by dispersing in a poly(vinyl butyral) binder the disazo compd. I (Z1 = 1,4-naphthylene; Z2 = 1,4-phenylene; A = coupler residue from 3-hydroxy-2-naphthoic acid anilide) to give a charge-generating layer and then dispersing in a PMMA binder a hydrazone compd. to form a **charge-transport** layer. The photoreceptor shows improved sensitivity and stability.

IT 108095-57-4

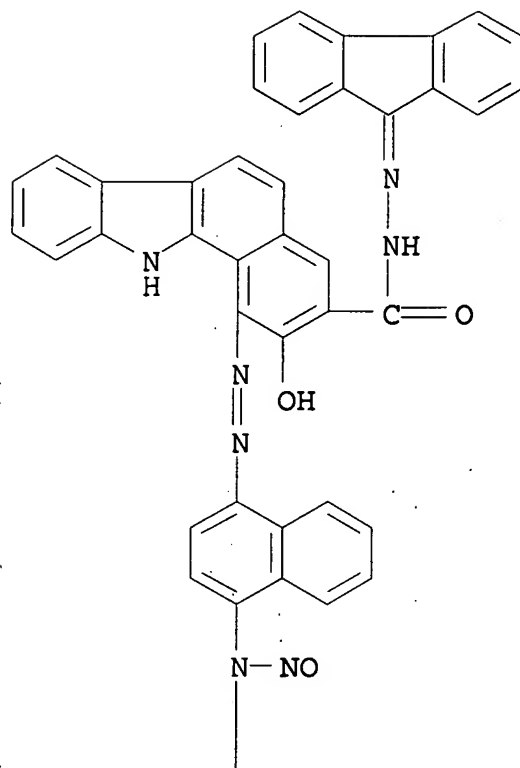
RL: USES (Uses)

(electrophotog. photoreceptor with charge-generating layer contg., for improved sensitivity and stability)

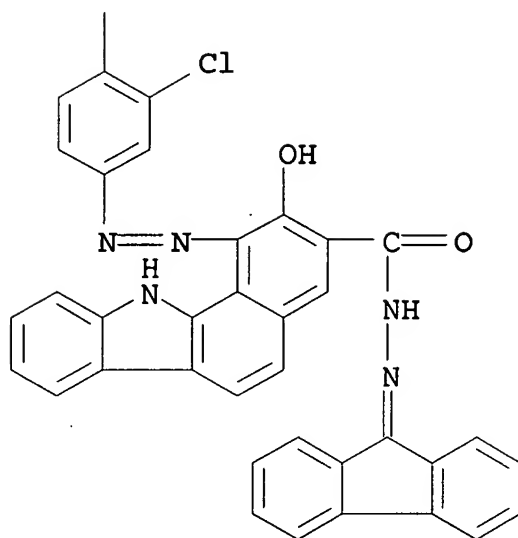
RN 108095-57-4 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxylic acid, 1-[[3-chloro-4-[[4-[[3-[(9H-fluoren-9-ylidenehydrazino)carbonyl]-2-hydroxy-11H-benzo[a]carbazol-1-yl]azo]-1-naphthalenyl]nitrosoamino]phenyl]azo]-2-hydroxy-, 9H-fluoren-9-ylidenehydrazide (9CI) (CA INDEX NAME)

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IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 108095-37-0 108095-38-1 108095-39-2 108095-40-5 108095-41-6
108095-42-7 108095-43-8 108095-44-9 108095-45-0 108095-46-1
108095-47-2 108095-48-3 108095-49-4 108095-50-7 108095-51-8
108095-52-9 108095-53-0 108095-54-1 108095-55-2 108095-56-3
108095-57-4 108095-58-5 108095-59-6 108095-60-9
108095-61-0 108095-62-1 108095-63-2 108095-64-3 108095-65-4
108095-66-5 108095-67-6 108095-68-7 108095-69-8 108095-70-1
108095-71-2 108095-72-3 108118-18-9 108118-19-0 108118-20-3

RL: USES (Uses)

(electrophotog. photoreceptor with charge-generating layer
contg., for improved sensitivity and stability)

L14 ANSWER 20 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:479433 HCAPLUS
DOCUMENT NUMBER: 103:79433
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 60023450 | A2 | 19850206 | JP 1983-132347 | 198307 20 |
| JP 04052460 | B4 | 19920821 | | |
| PRIORITY APPLN. INFO.: | | | JP 1983-132347 | 198307 20 |

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A photosensitive layer contg. I [R, R1 = lower alkyl, (substituted) aralkyl, (substituted) arom. moiety, (substituted) heterocyclic moiety; R and R1 may form a ring] is placed on a conductive support to obtain an electrophotog. photosensitive material. The material is easily prepd. and stable for repeated use. Thus, II 76, THF soln. of Vylon 200 (polyester resin) (2% solids) 1260, and THF 3700 parts were mixed to prep. a dispersion, which was coated on an Al film (vacuum evapd. on a polyester support) to form a 1- μ -thick charge-generating layer. Sep., III 2, Panlite K1300 2; and THF 16 parts were mixed, coated on the charge-generating layer, and dried to form a 20- μ -thick **charge-transferring** layer to obtain a composite type photosensitive material. Using the material, 10,000 copies were obtained with clear images, showing excellent durability.

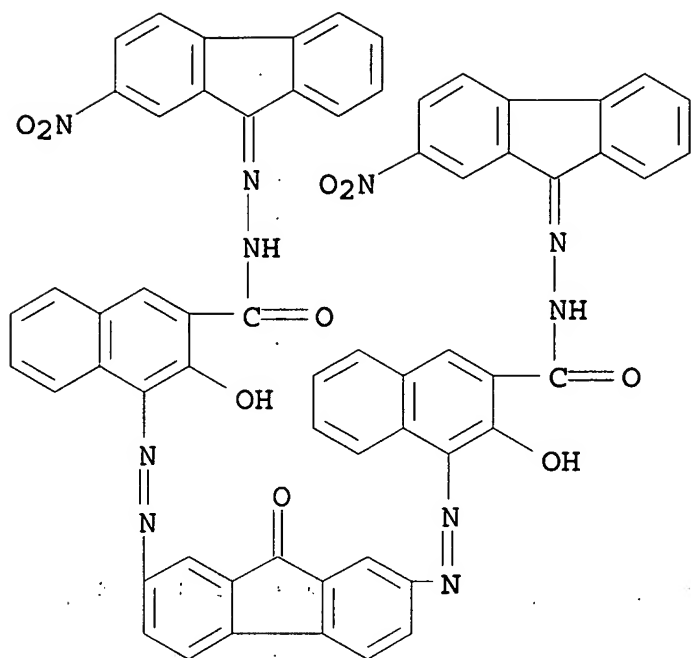
IT 97605-93-1

RL: USES (Uses)

(electrophotog. photoreceptor charge generating agent)

RN 97605-93-1 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(9-oxo-9H-fluorene-2,7-diyl)bis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)



IC ICM C09B035-34
ICS G03G005-06
ICA H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 97605-86-2 97605-87-3 97605-88-4 97605-89-5 97605-90-8
97605-91-9 97605-92-0 **97605-93-1** 97605-94-2
97626-49-8
RL: USES (Uses)
(electrophotog. photoreceptor charge generating agent)
IT 57609-72-0 75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor **charge transfer** layer contg., bisazo charge generating agent for)
IT 24936-68-3, uses and miscellaneous 71530-63-7
RL: USES (Uses)
(electrophotog. photoreceptor **charge transfer** layer contg., **charge** generating agent for)

L14 ANSWER 21 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:462485 HCAPLUS
DOCUMENT NUMBER: 103:62485
TITLE: Electrophotographic photoreceptor

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 60002958 | A2 | 19850109 | JP 1983-110463 | 198306 20 |

PRIORITY APPLN. INFO.: JP 1983-110463
198306
20

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB An electrophotog. photoreceptor has a photosensitive layer contg. a bisazo dye having the general formula I (R,R1 = lower alkyl, (substituted) aralkyl, aryl, heterocyclic group; R,R1 may be identical or jointly form a ring). The photoreceptor is easily prepd. and performs well during repeated operations. Thus, an Al-laminated polyester film was coated with a dispersion contg. II 76, a polyester resin (Vylon 200) 25.2 parts, and THF to form a charge-generating layer. Then III 2 and a polycarbonate resin (Panlite K1300) 2 parts were dissolved in THF and coated on the charge-generating layer to form a **charge-transport** layer. The electrophotog. photoreceptor was charged to -1100 V; the sensitivity (for half decay of voltage) was detd. to be 4.8 lx-s. Copying test gave >10,000 copies without blemishes.

IT 97451-23-5

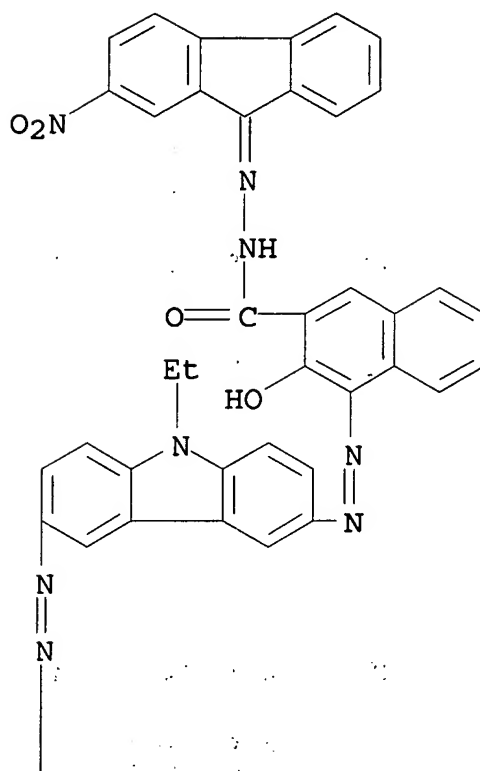
RL: USES (Uses)

(charge-generating layer contg., for electrophotog. plates)

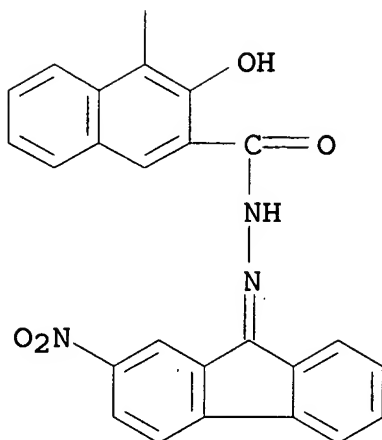
RN 97451-23-5 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(9-ethyl-9H-carbazole-3,6-diyl)bis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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IC ICM G03G005-06
ICS C09B035-34; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 97451-14-4 97451-15-5 97451-16-6 97451-17-7 97451-18-8
97451-19-9 97451-20-2 97451-21-3 97451-22-4 97451-23-5
RL: USES (Uses)
(charge-generating layer contg., for electrophotog. plates)
IT 24936-68-3, uses and miscellaneous
RL: USES (Uses)
(charge-transfer layer contg.
diethylaminophenylvinylantracene and, for electrophotog. plates)
IT 71530-63-7 75232-44-9 77383-46-1
RL: USES (Uses)
(charge-transfer layer contg., for
electrophotog. plates)

L14 ANSWER 22 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:414540 HCAPLUS
DOCUMENT NUMBER: 103:14540
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 60003634 | A2 | 19850110 | JP 1983-111514 | 198306 21 |
| PRIORITY APPLN. INFO.: | | | JP 1983-111514 | 198306 21 |

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB An electrophotog. photoreceptor has a photosensitive layer contg. a bisazo compd. I (R, R1 = lower alkyl, aralkyl, aryl, heterocyclic group; R, R1 may be identical or jointly form a ring). The material is easily prepd. and performs well during repeated operations. Thus, an Al-laminated polyester support was coated with a dispersion contg. II 76, a polyester resin (Vylon 200) 25.2 parts, and THF to form a charge-generating layer. Then III 2 and a polycarbonate resin (Panlite K 1300) 2 parts were dissolved in THF and coated on the material to form a **charge-transport** layer. The resultant photoreceptor was charged to -1150 V and the photosensitivity (for half decay of voltage) was detd. to be 2-7 lx-s. Copying test gave >10,000 copies without blemishes.

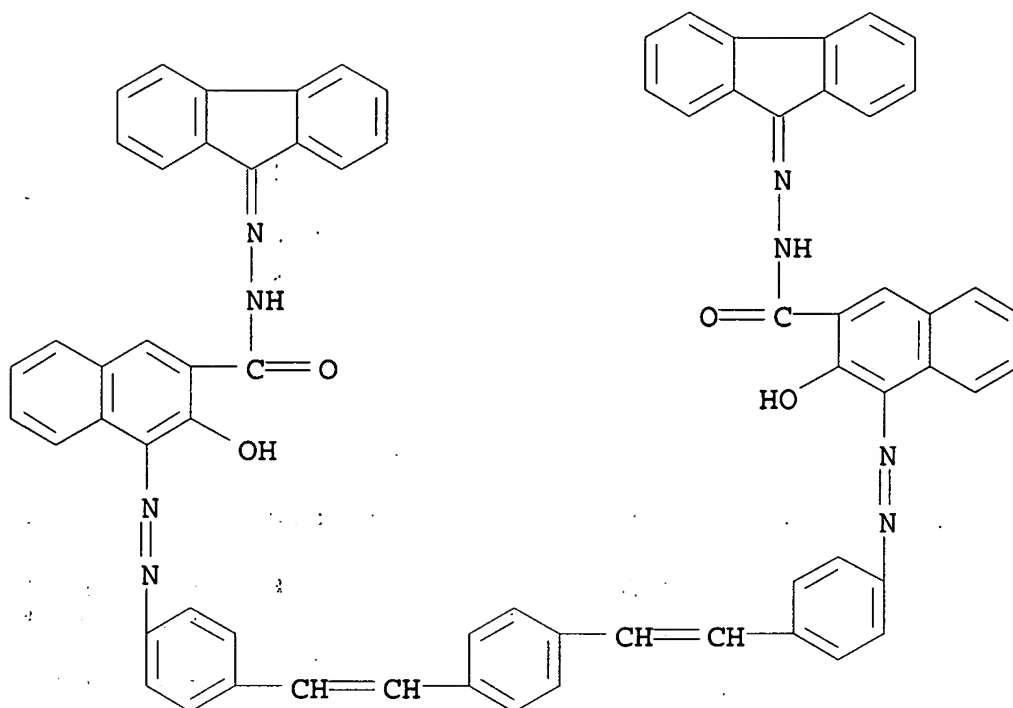
IT 96849-59-1

RL: USES (Uses)

(charge-generating layer contg., for electrophotog. plates)

RN 96849-59-1 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[1,4-phenylenebis(2,1-ethenediyl-4,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)



- IC ICM G03G005-06
ICS C09B035-039; H01L031-08
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT 96849-48-8 96849-59-1 96849-60-4 96849-61-5
96849-62-6 96849-63-7 96849-64-8 96849-65-9 96849-66-0
96849-67-1
RL: USES (Uses)
(charge-generating layer contg., for electrophotog. plates)
- IT 24936-68-3, uses and miscellaneous
RL: USES (Uses)
(charge-transport layer contg.
diethylaminophenylvinyl anthracene and, for electrophotog. plate
with bisazo dye charge-generating layer)
- IT 57609-72-0 71530-63-7 75232-44-9
RL: USES (Uses)
(charge-transport layer contg., for
electrophotog. plates with bisazo dye charge-generating layer)

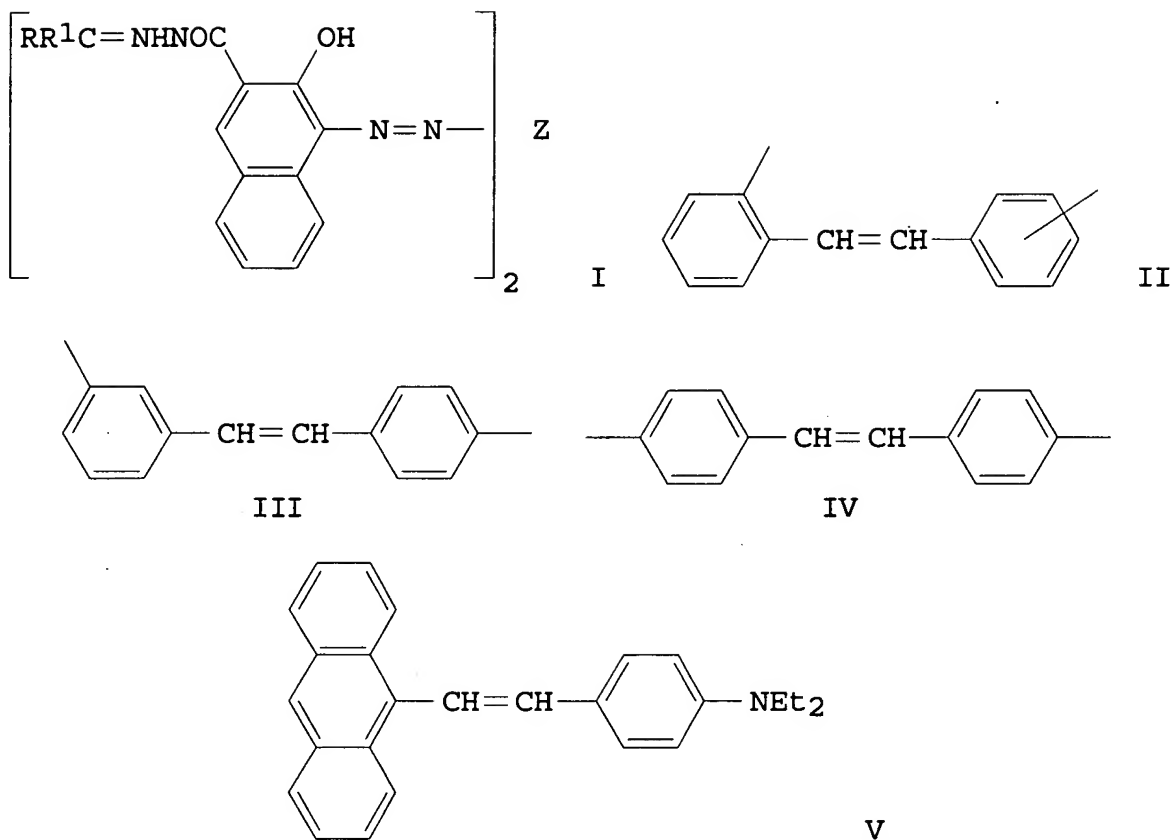
L14 ANSWER 23 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:229424 HCAPLUS

DOCUMENT NUMBER: 102:229424
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. ----- | KIND ---- | DATE ----- | APPLICATION NO. ----- | DATE |
|---------------------|--------------|---------------|--------------------------|--------------|
| JP 60000454 | A2 | 19850105 | JP 1983-108980 | 198306 17 |
| JP 04022261 | B4 | 19920416 | JP 1983-108980 | 198306 17 |

PRIORITY APPLN. INFO.:

GI



AB A photoreceptor has a supported photosensitive layer contg. a bisazo compd. having the general formula I (Z = II, III, IV; R, R1 = H, lower alkyl, (substituted) aralkyl, arom. group, heterocyclic group; R, R1 may be identical and may jointly form a ring). The use of the claimed bisazo compd. provides a photoreceptor having long life and ease of prepn. Thus, an Al-coated polyester film was coated with a dispersion contg. a bisazo dye (I; R = R1 = H; Z = o-C6H4CH:CHC6H4-o) 76 and a polyester resin (Vylon 200; Toyoho Co.) 25.2 parts in THF to form a charge-generating layer. A **charge-transfer** layer was formed by coating a compn. contg. compd. V 2 and a polycarbonate resin (Panlite K 1300; Teijin Chems.) 2 parts. The obtained photoreceptor upon charging to -850 V showed a sensitivity (lx-s for half decay of voltage by irradiation) of 15.0.

IT 96442-14-7

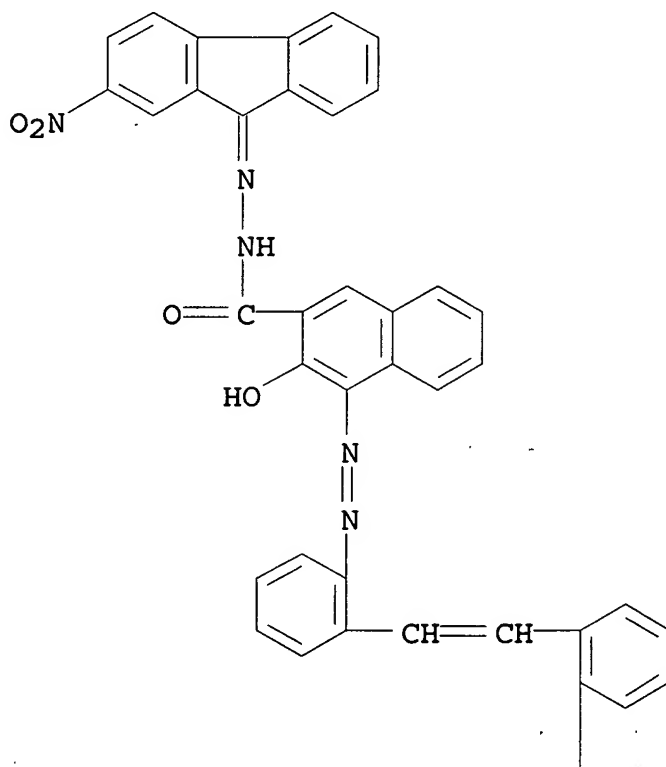
RL: TEM (Technical or engineered material use); USES (Uses)

(electrophotog. photoreceptor charge-generating agent)

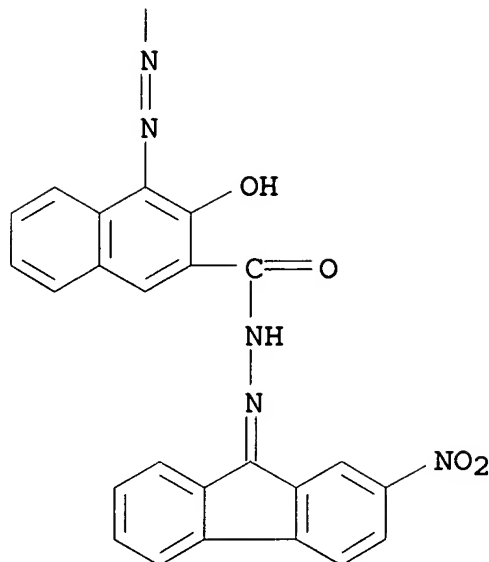
RN 96442-14-7 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[1,2-ethenediylbis(2,1-phenyleneazo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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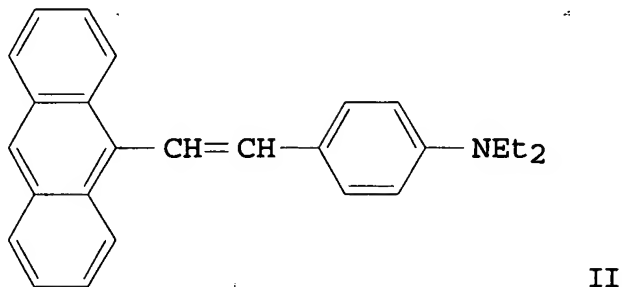
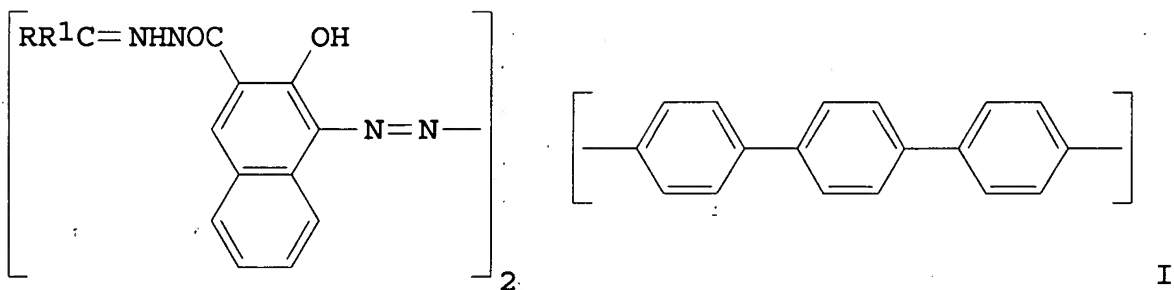
IC ICM G03G005-06
ICA C09B035-039; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 96357-84-5 96357-85-6 96357-86-7 96357-87-8 96357-88-9
96357-89-0 96357-90-3 96357-91-4 **96442-14-7**
96442-15-8 96442-16-9 96442-17-0 96442-18-1 96442-19-2
96442-20-5 96442-21-6 96442-22-7 **96442-23-8**
96442-24-9 96442-25-0 96442-26-1 96442-27-2 96442-28-3
96442-29-4 96442-30-7 96442-31-8 **96442-32-9**
96442-33-0 96442-34-1 96442-35-2 96442-36-3 96442-37-4
96442-38-5 96442-39-6 96442-40-9 96442-41-0 **96442-42-1**
96442-43-2 97179-28-7
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoreceptor charge-generating agent)
IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor **charge-transfer**
layer contg.)

L14 ANSWER 24 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:212628 HCAPLUS
DOCUMENT NUMBER: 102:212628

TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. ----- | KIND ---- | DATE ----- | APPLICATION NO. ----- | DATE |
|---------------------------------------|--------------|---------------|--------------------------|--------------|
| JP 60000453 | A2 | 19850105 | JP 1983-108979 | 198306 17 |
| PRIORITY APPLN. INFO.: JP 1983-108979 | | | | 198306 17 |

GI



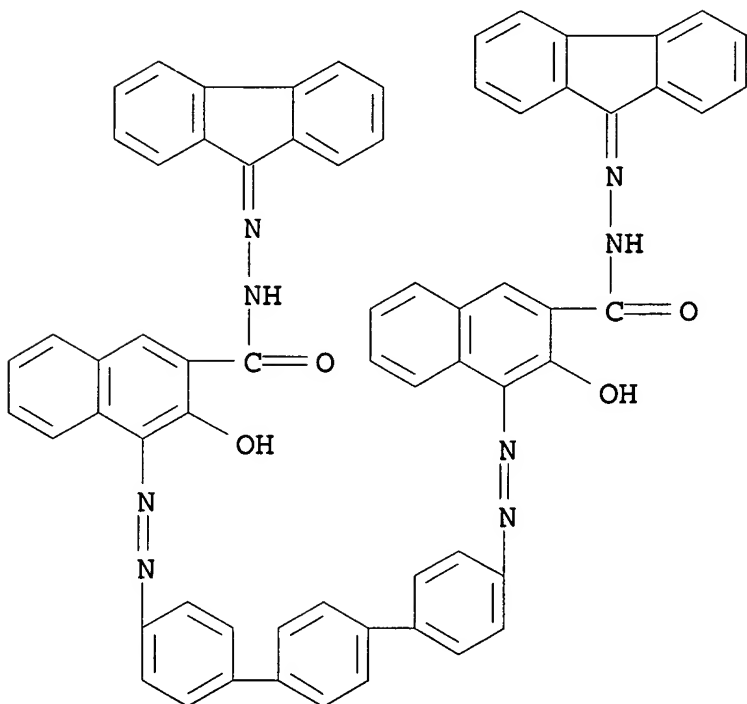
AB A photoreceptor has a supported photosensitive layer contg. a bisazo compd. having the general formula I (R, R1 = H, lower alkyl, (substituted) aralkyl, arom. group, heterocyclic group; R, R1 may be identical and may jointly form a ring). The use of the claimed bisazo compd. provides a photoreceptor having long life and ease of prepn. Thus, an Al-laminated polyester film was coated with a dispersion contg. a bisazo dye (I; R = 2-methoxyphenyl; R1 = H) 76 and a polyester resin (Vylon 200; Toyobo Co.) 25.2 parts in THF to form a charge-generating layer. A **charge-transfer** layer was formed by coating a soln. of compd. II 2 and a polycarbonate resin (Panlite K 1300; Teijin Chems.) 2 parts. The obtained photoreceptor upon charging to -825 V showed a sensitivity (lx-s for half decay of voltage by irradiation) of 6.7.

IT 96442-50-1

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoreceptor charge-generating agent)

RN 96442-50-1 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[[1,1':4',1''-terphenyl]-4,4''-diylbis(azo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS C09B035-039; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 96442-44-3 96442-45-4 96442-46-5 96442-47-6 96442-48-7
96442-49-8 96442-50-1 96442-51-2 96452-91-4
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoreceptor charge-generating agent)
IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor **charge-transfer**
layer contg.)

L14 ANSWER 25 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:212627 HCAPLUS
DOCUMENT NUMBER: 102:212627
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| JP 60000452 | A2 | 19850105 | JP 1983-108978 | 198306 17 |
| JP 04052458 | B4 | 19920821 | JP 1983-108978 | 198306 17 |

PRIORITY APPLN. INFO.:

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A photoreceptor has a supported photosensitive layer contg. a bisazo

compd. having the general formula I (Z = II, III; R₂ = H, Cl, OMe, nitro; R, R₁ = H, lower alkyl, (substituted) aralkyl, arom. group, heterocyclic group; R, R₁ may be identical and may jointly form a ring). The use of the claimed bisazo compd. provides a photoreceptor having long life and ease of prepn. Thus, an Al-laminated polyester film was coated with a dispersion contg. bisazo dye IV 76 and a polyester resin (Vylon 200; Toyobo Co.) 25.2 parts in THF to form a charge-generating layer. A **charge-transfer** layer was formed by coating a soln. of compd. V 2 and a polycarbonate resin (Panlite K 1300; Teijin Chems.) 2 parts. The obtained photoreceptor upon charging to -980 V showed a sensitivity (lx-s for half decay of voltage by irradiation) of 10.0.

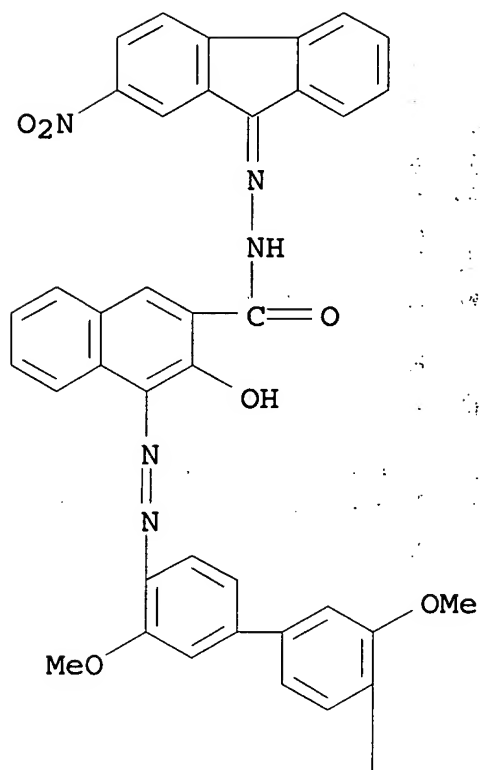
IT 96358-12-2

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoreceptor charge-generating agent)

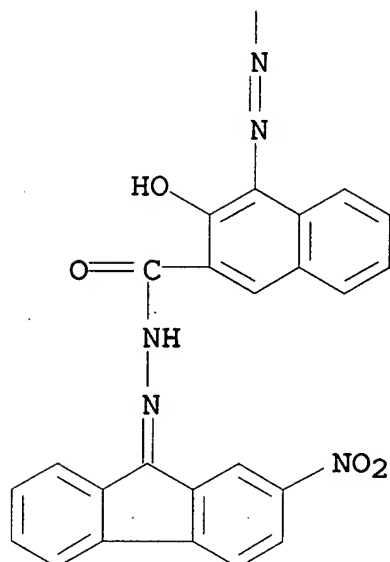
RN 96358-12-2 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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IC ICM G03G005-06
ICA C09B035-039; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 92751-83-2 93608-75-4 93608-76-5 93608-79-8 93608-80-1
93608-83-4 93608-93-6 95904-20-4 96357-92-5 96357-93-6
96357-94-7 96357-95-8 96357-96-9 96357-97-0 96357-98-1
96357-99-2 96358-00-8 96358-01-9 96358-02-0 96358-03-1
96358-04-2 96358-05-3 96358-06-4 96358-07-5 96358-08-6
96358-09-7 96358-10-0 96358-11-1 **96358-12-2**
96358-13-3 96358-14-4 96358-15-5 96358-16-6 96358-17-7
96358-18-8 96358-19-9 96358-20-2 96358-21-3
96358-22-4 96358-23-5 96358-24-6 96358-25-7 96358-26-8
96358-27-9 96381-09-8 **96381-10-1**
96381-11-2 96381-12-3 96442-52-3 96572-80-4
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoreceptor charge-generating agent)
IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor **charge-transfer**
layer contg.)

L14 ANSWER 26 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:195131 HCAPLUS
DOCUMENT NUMBER: 102:195131
TITLE: Electrophotographic photoreceptors
PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------------------------|------|----------|-----------------|--------------|
| JP 60002957 | A2 | 19850109 | JP 1983-110195 | 198306 21 |
| PRIORITY APPLN. INFO.: JP 1983-110195 | | | | 198306 21 |

GI For diagram(s), see printed CA Issue.

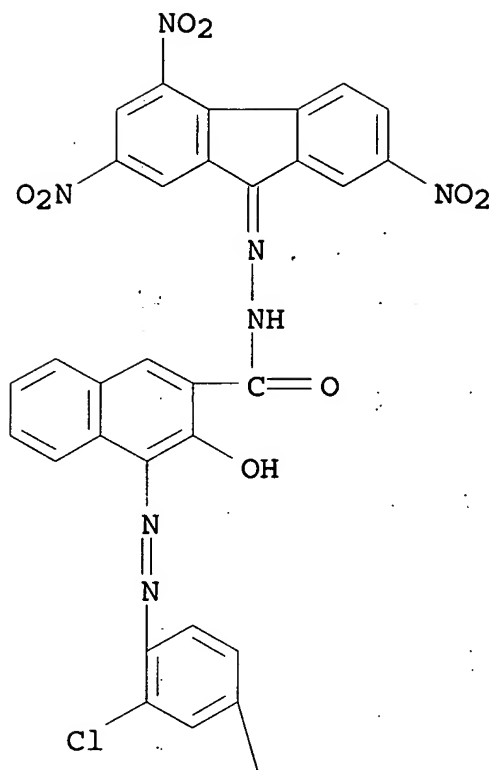
AB An electrophotog. photoreceptor with improved sensitivity and durability has a photosensitive layer contg. a charge carrier-generating disazo compd. of the formula I and a **charge carrier-transporting** indoline compd. of the formula II [R1 = CONHN:CHR3, -CONHN:CR4R5, III (R3 = Ph, naphthyl, anthranyl, pyridyl, thienyl, furyl, carbazolyl; R4, R5 = alkyl, aryl; A = alicyclyl, heterocyclyl residue); R2 = H, halo, alkyl, alkoxyl, NO2; R = aryl, arom. heterocyclyl; R6, R7 = H, halo, alkyl, aralkyl, aryl]. An electron acceptor (e.g., 3,5-dinitrobenzoic acid) may also be incorporated in the above photosensitive layer to further improve the sensitivity and durability of the above photoreceptor.

IT **95904-21-5**
RL: USES (Uses)
(electrophotog. photoreceptors with photosensitive layer contg. charge carrier-generating substance of)

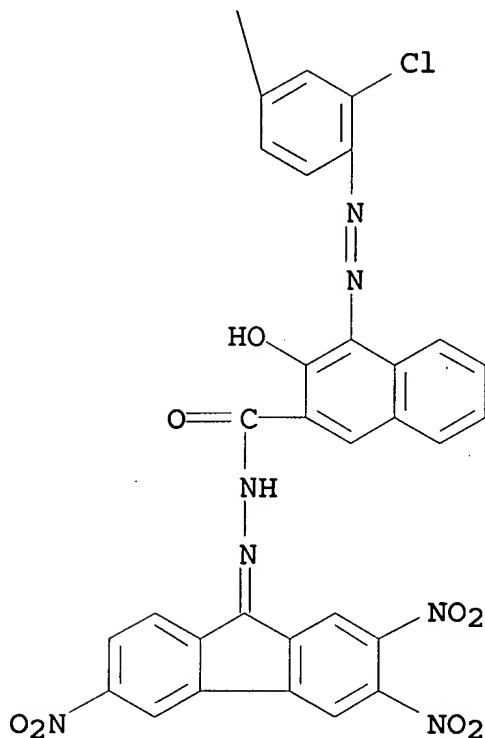
RN 95904-21-5 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(3,3'-dichloro[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[3-hydroxy-, bis[(2,3,6-trinitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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PAGE 2-A



IC ICM G03G005-04
ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Photography, electro-, photoconductors
(composite, contg. disazo charge carrier-generating compd. and indoline **charge carrier-transporting** compd. and electron acceptors)

IT 93608-70-9 93608-71-0 93608-72-1 93608-73-2 93608-74-3
93608-75-4 93608-77-6 93608-78-7 93608-79-8 93608-80-1
93608-81-2 93608-82-3 93608-83-4 93608-86-7 93608-87-8
93608-88-9 93608-89-0 93608-90-3 93608-91-4 93608-92-5
93608-93-6 95904-20-4 95904-21-5 95904-22-6
95919-53-2 96324-91-3

RL: USES (Uses)
(electrophotog. photoreceptors with photosensitive layer contg. charge carrier-generating substance of)

IT 87866-83-9 87866-87-3

RL: USES (Uses)

(electrophotog. photoreceptors with photosensitive layers contg.
charge carrier-transporting substance of)

L14 ANSWER 27 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:176507 HCAPLUS
DOCUMENT NUMBER: 102:176507
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 59232350 | A2 | 19841227 | JP 1983-105954 | 198306 15 |
| PRIORITY APPLN. INFO.: | | | JP 1983-105954 | 198306 15 |

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Electrophotog. photosensitive layers contain bisazo pigments I (R,R1 = H, lower alkyl, aralkyl, aryl, heterocyclyl; RR1 in combination may form a ring). Thus, an Al-laminated polyester film support was coated with a compn. contg. II and Vylon 200 (a polyester), and coated with a compn. contg. III and Panlite K-1300 (a polycarbonate resin) to give an electrophotog. composite plate which showed good sensitivity and electrostatic characteristics.

IT 96020-64-3

RL: USES (Uses)

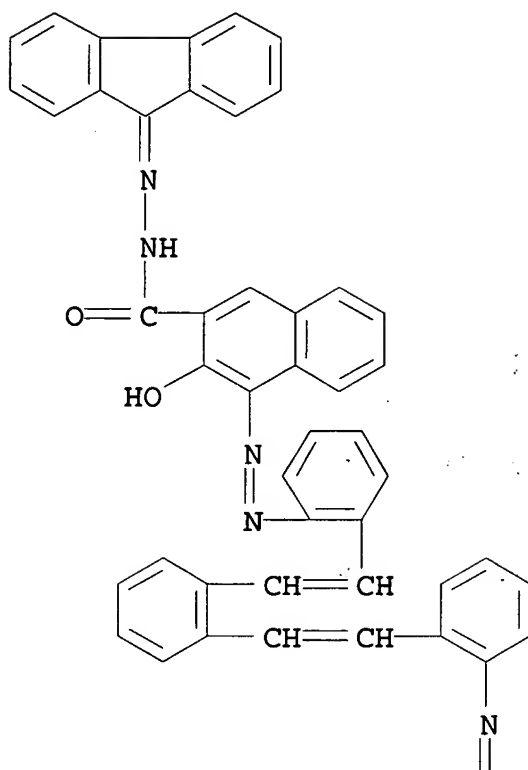
(electrophotog. charge-generating pigment)

RN 96020-64-3 HCAPLUS

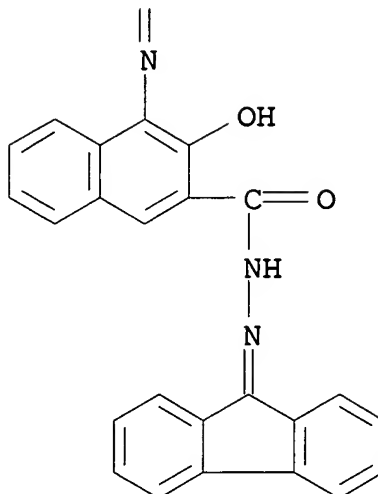
CN 2-Naphthalenecarboxylic acid, 4,4'-[1,2-phenylenebis(2,1-ethenediyl-2,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide)]

(9CI) (CA INDEX NAME)

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IC ICM G03G005-06
ICA C09B035-039; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 95993-15-0 95993-16-1 95993-17-2 95993-18-3 95993-19-4
95993-20-7 95993-21-8 95993-22-9 95993-23-0 95993-24-1
95993-25-2 95993-26-3 95993-27-4 95993-28-5 95993-29-6
95993-30-9 95993-31-0 95993-32-1 95993-33-2 95993-34-3
95993-35-4 95993-36-5 95993-37-6 95993-38-7 96020-63-2
96020-64-3 96020-65-4 96020-66-5 96020-67-6
96037-78-4
RL: USES (Uses)
(electrophotog. charge-generating pigment)
IT 57609-72-0 71530-63-7 75232-44-9
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. **charge-transfer** agent)

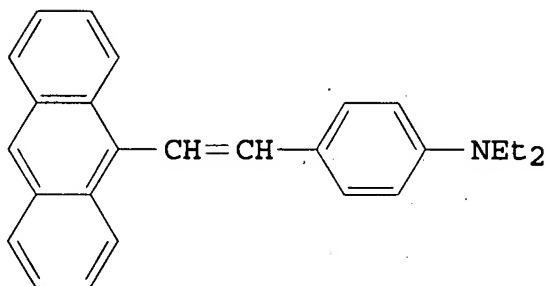
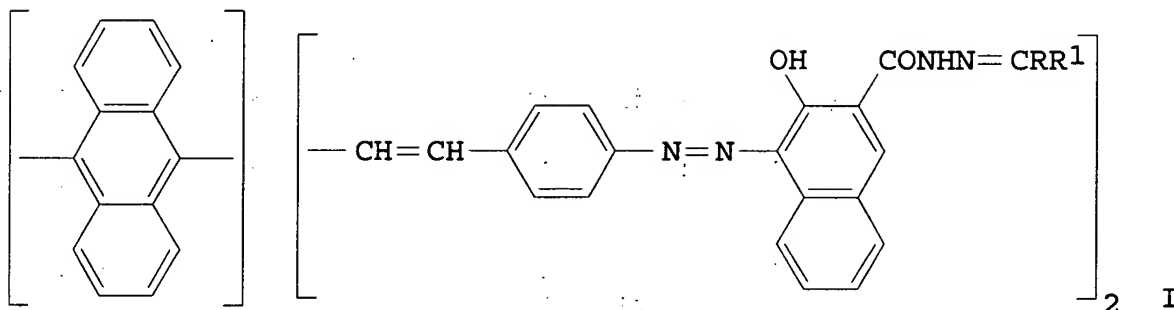
L14 ANSWER 28 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:176489 HCAPLUS
DOCUMENT NUMBER: 102:176489
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 59214037 | A2 | 19841203 | JP 1983-87676 | 19830520 |
| PRIORITY APPLN. INFO.: | | | | 19830520 |

GI



AB A photosensitive layer of the electrophotog. photoreceptor formed on conductive support contains a bisazo dye having the general formula I (R, R1 = H, lower alkyl, aralkyl, arom. group, heterocyclic group; R and R1 may be identical and may jointly form a ring). Claimed dyes are good charge generators and provide facile prepn. of durable

electrophotog. photoreceptor. Thus, a bisazo compd. (I: R = Ph; R1 = H) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts and THF were dispersed and coated on an Al-laminated polyester film to form a charge generating layer. The **charge transfer** layer was formed by coating a THF soln. contg. **charge transfer** substance II 2 and polycarbonate resin (Panlite K1300; Teijin Chem. Ltd.) 2 parts in THF. The photoreceptor upon charging to -870 V showed a sensitivity (half decay of voltage) of 4.9 lx-s.. Copying tests gave >10,000 blemish-free copies.

IT 96011-89-1

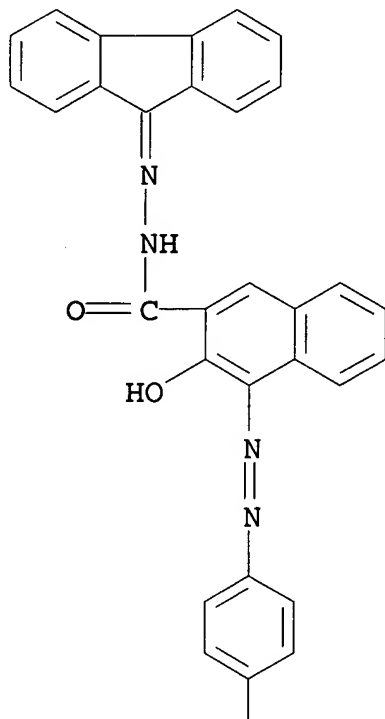
RL: USES (Uses)

(electrophotog. charge generating agent)

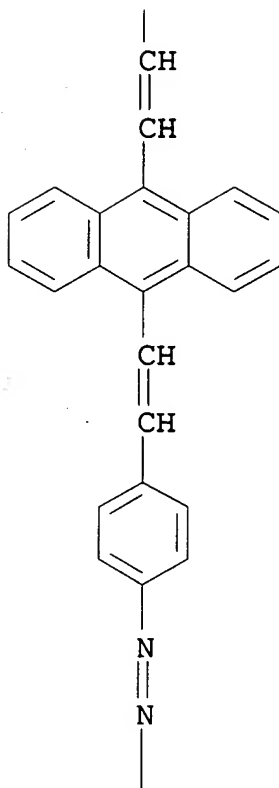
RN 96011-89-1 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[9,10-anthracenediylbis(2,1-ethenediyl-4,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)

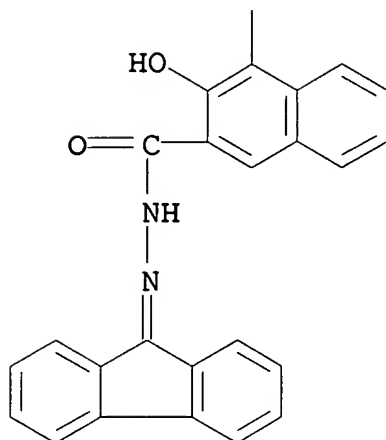
PAGE 1-A



PAGE 2-A



PAGE 3-A

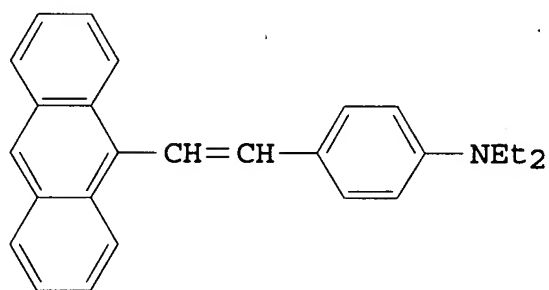
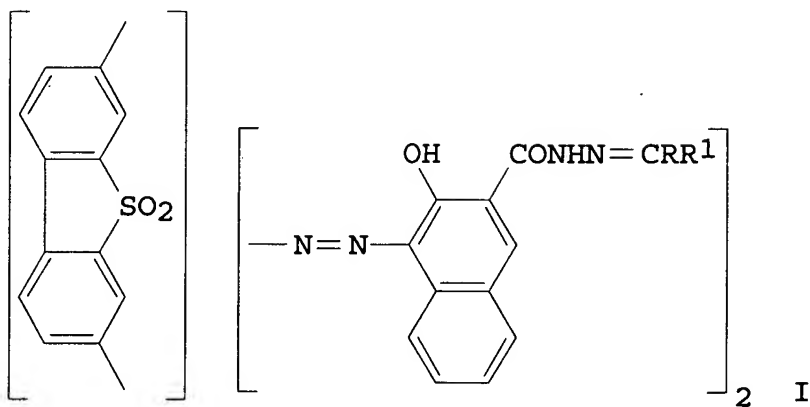


IC ICM G03G005-06
ICS C09B035-023; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 96011-87-9 96011-88-0 **96011-89-1** **96011-90-4**
96011-91-5 96012-15-6 96012-16-7 96012-17-8 96012-18-9
96022-20-7
RL: USES (Uses)
(electrophotog. charge generating agent)
IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor with **charge**
transfer layer contg., bisazo dye charge generating layer
for)

L14 ANSWER 29 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:176488 HCAPLUS
DOCUMENT NUMBER: 102:176488
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. ----- | KIND ---- | DATE ----- | APPLICATION NO. ----- | DATE |
|------------------------|--------------|---------------|--------------------------|--------------|
| JP 59214038 | A2 | 19841203 | JP 1983-87677 | 198305 20 |
| JP 04022266 | B4 | 19920416 | JP 1983-87677 | 198305 20 |
| PRIORITY APPLN. INFO.: | | | | |

GI



AB A photosensitive layer of the electrophotog. photoreceptor formed on conductive support contains a bisazo dye having the general formula I (R, R1 = H, lower alkyl, aralkyl, arom. group, heterocyclic group; R and R1 may be identical and may jointly form a ring). Claimed

dyes are good charge generators and provide facile prepn. of durable electrophotog. photoreceptors. Thus, a bisazo compd. (I; R = Ph; R1 = H) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts and THF were dispersed and coated on an Al-laminated polyester film to form a charge generating layer. The **charge transfer** layer was formed by coating a THF soln. contg. **charge transfer** substance II 2 and polycarbonate resin (Panlite K1300; Teijin Chem. Ltd.) 2 parts in THF. Photoreceptor upon charging to -1030 V showed a sensitivity (half decay of voltage) of 10.1 lx-s. Copying tests gave >10,000 blemish-free copies.

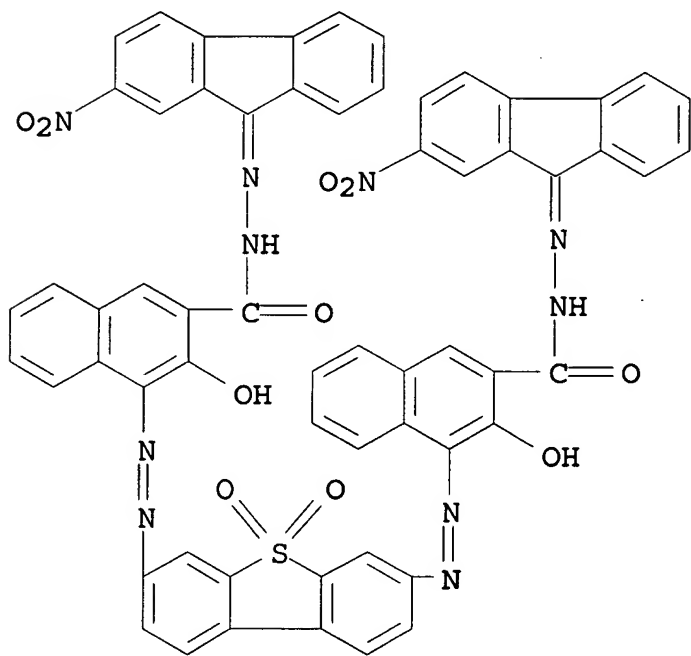
IT 96011-98-2

RL: USES (Uses)

(electrophotog. charge generating agent)

RN 96011-98-2 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(5,5-dioxido-3,7-dibenzothiophenediyl)bis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)



IC ICM G03G005-06

ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 96011-92-6 96011-93-7 96011-94-8 96011-95-9 96011-96-0

96011-97-1 96011-98-2 96011-99-3 96022-05-8

96022-06-9

RL: USES (Uses)

(electrophotog. charge generating agent)

IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9

RL: USES (Uses)

(electrophotog. photoreceptor **charge transfer**
layer contg., bisazo dye charge generating layer for)

L14 ANSWER 30 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:176487 HCAPLUS

DOCUMENT NUMBER: 102:176487

TITLE: Electrophotographic photoreceptor

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

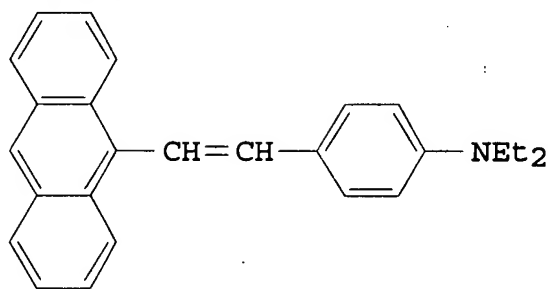
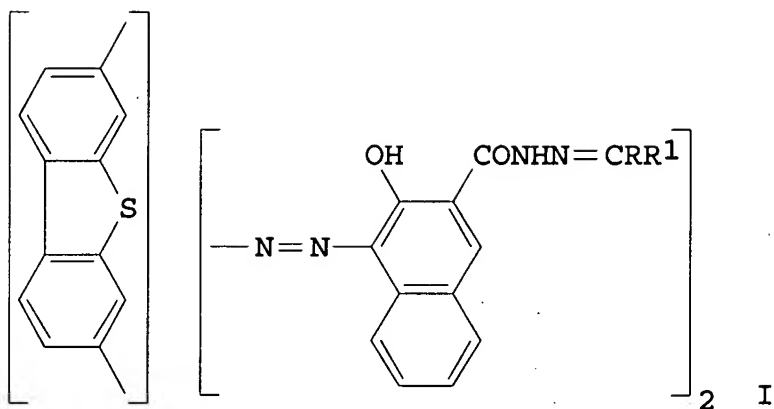
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 59214039 | A2 | 19841203 | JP 1983-87678 | 198305 20 |
| JP 04022267 | B4 | 19920416 | | |
| PRIORITY APPLN. INFO.: | | | JP 1983-87678 | 198305 20 |

GI



AB A photosensitive layer of the electrophotog. photoreceptor formed on conductive support contains a bisazo dye having the general formula I (R, R1 = H, lower alkyl, aralkyl, arom. group, heterocyclic group; R and R1 may be identical and may jointly form a ring). Claimed dyes are good charge generators and provide facile prepn. of durable electrophotog. photoreceptor. Thus, a bisazo compd. (I; R = Ph; R1 = H) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts and THF were dispersed and coated on an Al-laminated polyester film to form a charge generating layer. The **charge transfer** layer was formed by coating a THF soln. contg. **charge transfer** substance II 2 and polycarbonate resin (Panlite K1300; Teijin Chem. Ltd.) 2 parts in THF. The photoreceptor upon charging to -950 V showed a sensitivity (half decay of voltage) of 9.9 lx-s. Copying tests gave >10,000 blemish-free copies.

IT 96022-08-1

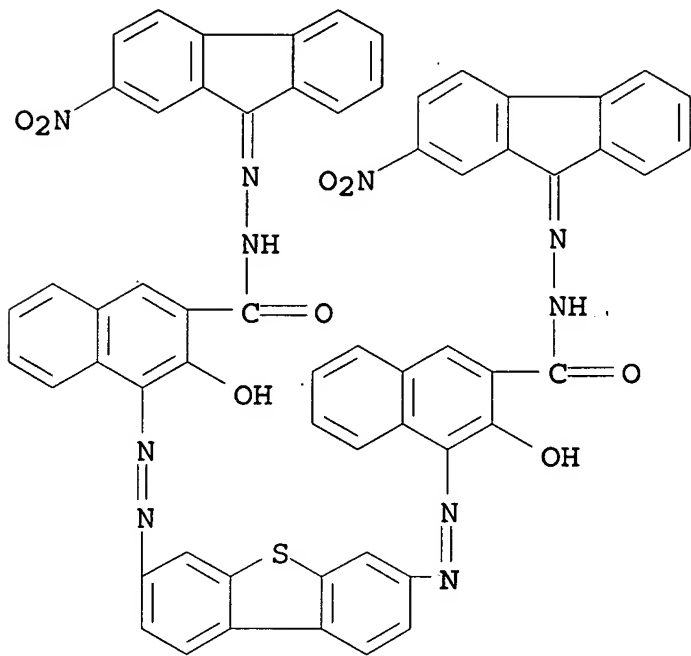
RL: USES (Uses)

(electrophotog. charge generating agent)

RN 96022-08-1 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[3,7-

dibenzothiophenediylbis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 96012-00-9 96012-01-0 96012-02-1 96012-03-2 96012-04-3
96012-05-4 96012-06-5 96012-07-6 96022-07-0 96022-08-1
RL: USES (Uses)
(electrophotog. charge generating agent)
IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor with **charge transfer** layer contg., bisazo dye charge generating layer for)

L14 ANSWER 31 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:176484 HCAPLUS
DOCUMENT NUMBER: 102:176484
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 59218455 | A2 | 19841208 | JP 1983-92483 | 198305 27 |
| | | | | 198305 27 |

PRIORITY APPLN. INFO.: JP 1983-92483

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB An electrophotog. photoreceptor has a conductive support and a photoreceptor layer contg. a bisazo dye having the general formula I (R, R1 = H, lower alkyl, (substituted) aralkyl, (substituted) arom. or heterocyclic group; R and R1 may be identical and may jointly constitute part of a ring system). The photoreceptor is easy to prep. and has long usable life. Thus, an Al-coated polyester film support was coated with a dispersion contg. I (R = H, R1 = Ph) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts, and THF to form a 1 μ m charge-generating layer. A 20 μ m **charge transfer** layer was formed by coating a soln. of II 1 and polycarbonate resin (Panlite K1300; Teijin Chem.) 1 part in THF. The photoreceptor upon charging to -920 V showed a sensitivity (half voltage decay) of 3 lx-s. Copying tests gave >10,000 blemish-free copies.

IT 96041-59-7

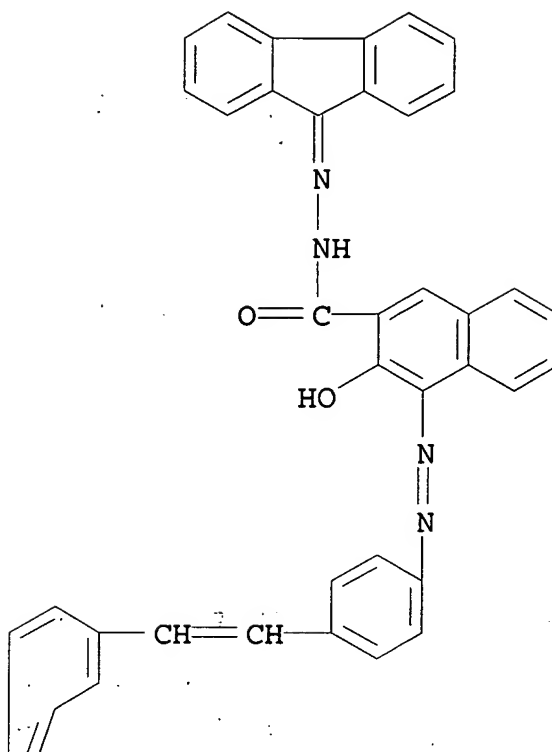
RL: USES (Uses)

(electrophotog. photoreceptor charge generating agent)

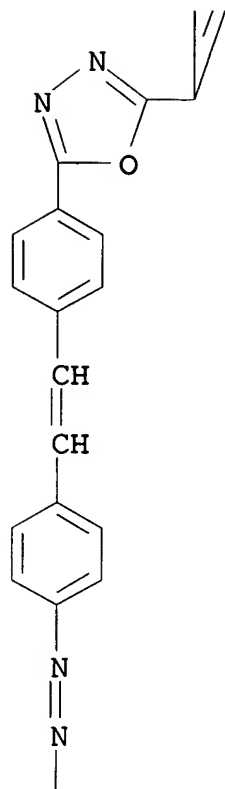
RN 96041-59-7 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[1,3,4-oxadiazole-2,5-diylbis(4,1-phenylene-2,1-ethenediyl-4,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)

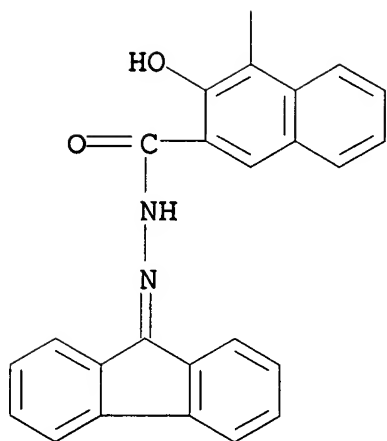
PAGE 1-A



PAGE 2-A



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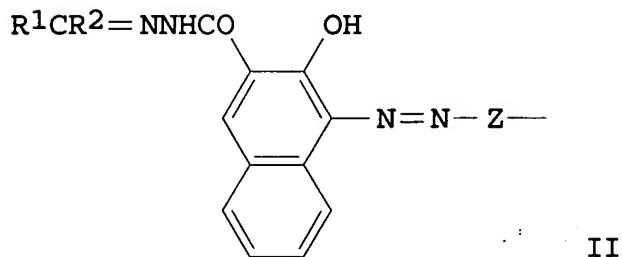
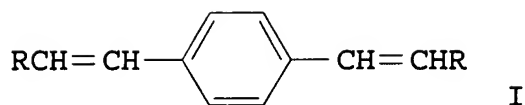


IC ICM G03G005-06
ICA C09B035-34; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 96012-08-7 96012-09-8 96012-10-1 96022-09-2 96022-10-5
96022-11-6 96022-12-7 96022-13-8 96022-14-9 **96041-59-7**
RL: USES (Uses)
(electrophotog. photoreceptor charge generating agent)
IT 24936-68-3, uses and miscellaneous 57609-72-0 71530-63-7
75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor **charge transfer**
layer contg., bisazo dye charge generating agent layer for)

L14 ANSWER 32 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:158045 HCAPLUS
DOCUMENT NUMBER: 102:158045
TITLE: Photosensitive drum for electrophotography
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 59232352 | A2 | 19841227 | JP 1983-105956 | 198306 15 |
| PRIORITY APPLN. INFO.: | | | JP 1983-105956 | 198306 15 |

GI



AB The photosensitive drum (on plate) for electrophotog. consists of an electroconductive support provided with a photosensitive layer contg. a bisazo compd., (I) [R = I (z = o- or m-phenylene; R1, R2= H, lower alkyl, aralkyl, aryl, heterocycl; R1, R2 may form an ring)]. The drum can be subjected to repetitive use.

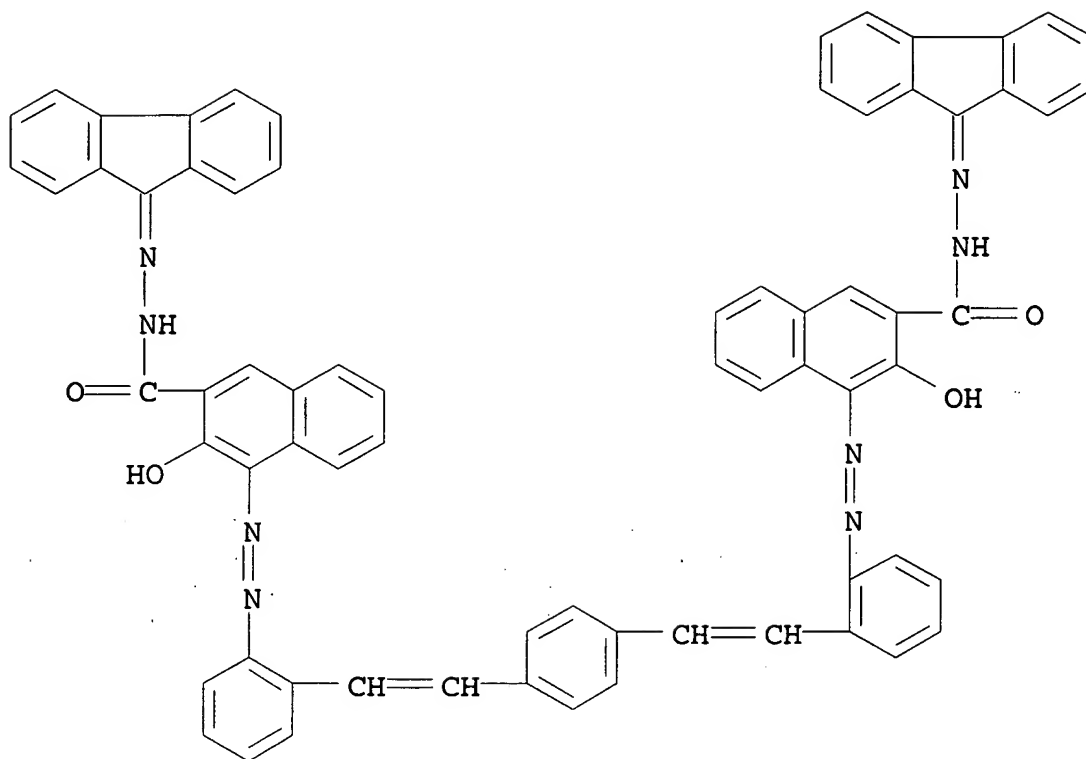
IT 95738-41-3

RL: USES (Uses)

(electrophotog. charge-generating pigment)

RN 95738-41-3 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[1,4-phenylenebis(2,1-ethenediyl-2,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)



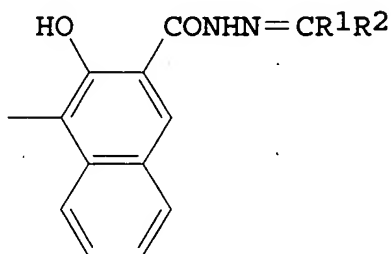
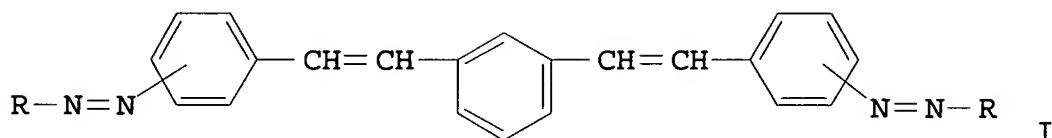
IC ICM G03G005-06
 ICA C09B035-039; H01L031-08
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 95738-32-2 95738-33-3 95738-34-4 95738-35-5 95738-36-6
 95738-37-7 95738-38-8 95738-39-9 95738-40-2 **95738-41-3**
 95756-15-3 95756-16-4 95756-17-5 95756-18-6 95756-19-7
 95756-20-0 95756-21-1 **95756-22-2 95756-23-3**
 95772-61-5
 RL: USES (Uses)
 (electrophotog. charge-generating pigment)
 IT 57609-72-0 71530-63-7 75232-44-9
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electrophotog. **charge-transfer** agent)

L14 ANSWER 33 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1985:158044 HCAPLUS
 DOCUMENT NUMBER: 102:158044
 TITLE: Photosensitive drum for electrophotography
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------------|
| JP 59232351 | A2 | 19841227 | JP 1983-105955 | 19830615 |
| PRIORITY APPLN. INFO.: | | | | JP 1983-105955 |
| | | | | 19830615 |

GI



AB In a photosensitive drum (or plate) for electrophotog. obtained by depositing a photosensitive layer on an electroconductive substrate, the photosensitive layer contain a bisazo compd., (I) [R = II (R1, R2 = H, lower alkyl, aralkyl, aryl, heterocyclyl, R1, R2 may combine to form a ring)]. The photosensitive drum (or plate) can withstand repetitive use.

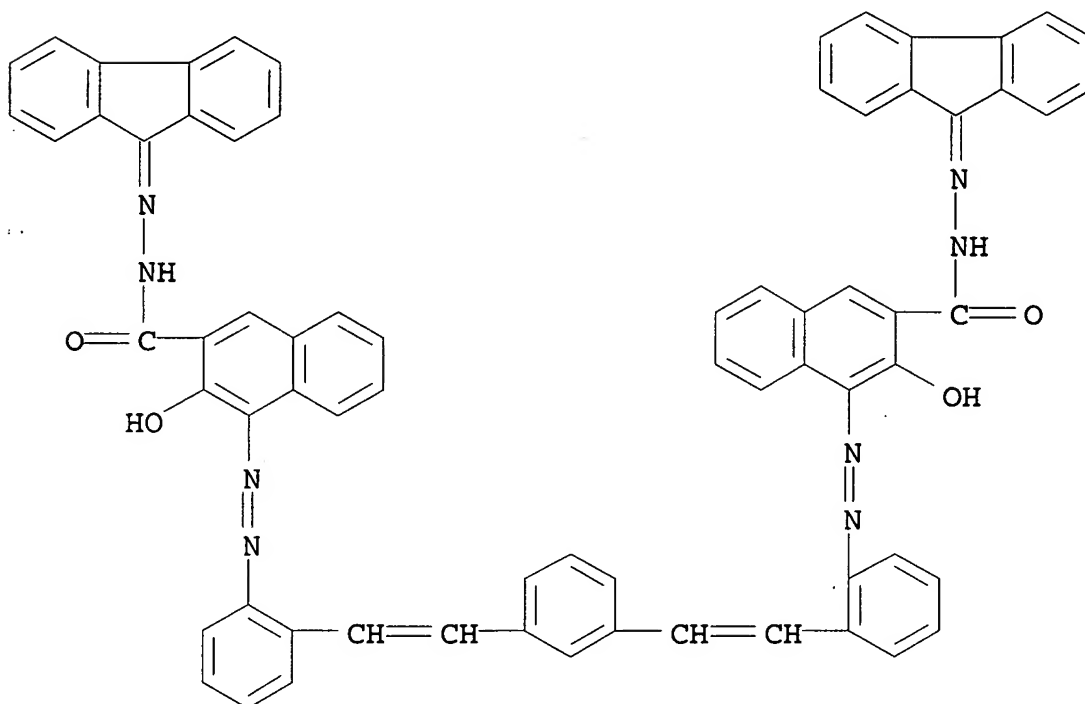
IT 95737-93-2

RL: USES (Uses)

(electrophotog. charge-generating pigment)

RN 95737-93-2 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[1,3-phenylenebis(2,1-ethenediyl-2,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)



IC ICM G03G005-06

ICA C09B035-039; H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 95737-84-1 95737-85-2 95737-86-3 95737-87-4 95737-88-5
 95737-89-6 95737-90-9 95737-91-0 95737-92-1 **95737-93-2**
 95737-94-3 95737-95-4 95737-96-5 95737-97-6 95737-98-7
 95737-99-8 95738-00-4 95738-01-5 95738-02-6 **95738-03-7**
95738-04-8 95738-05-9 95738-06-0 95738-07-1
 95738-08-2 95738-09-3 95738-10-6 95738-11-7 95738-12-8
95738-13-9

RL: USES (Uses)

(electrophotog. charge-generating pigment)

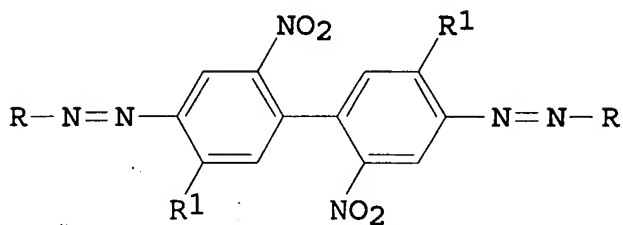
IT 57609-72-0 71530-63-7 75232-44-9

RL: TEM (Technical or engineered material use); USES (Uses)
 (electrophotog. **charge-transfer** agent)

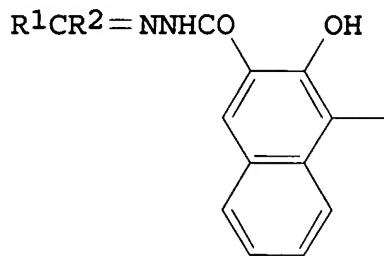
L14 ANSWER 34 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:158043 HCAPLUS
DOCUMENT NUMBER: 102:158043
TITLE: Photosensitive drum for electrophotography
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 59232349 | A2 | 19841227 | JP 1983-105953 | 19830615 |
| PRIORITY APPLN. INFO.: | | | | 19830615 |

GI



I



II

AB In a photosensitive drum (or plate) for electrophotog. obtained by depositing a photosensitive layer on a substrate, the photosensitive layer contains a bisazo compd. I [R1 = H, MeO; R = II (R1, R2 = H, lower alkyl, aralkyl, aryl, heterocyclyl, R1, R2 may combine to form a heterocyclic ring)]. The photosensitive plate withstands repetitive use.

IT 95738-23-1

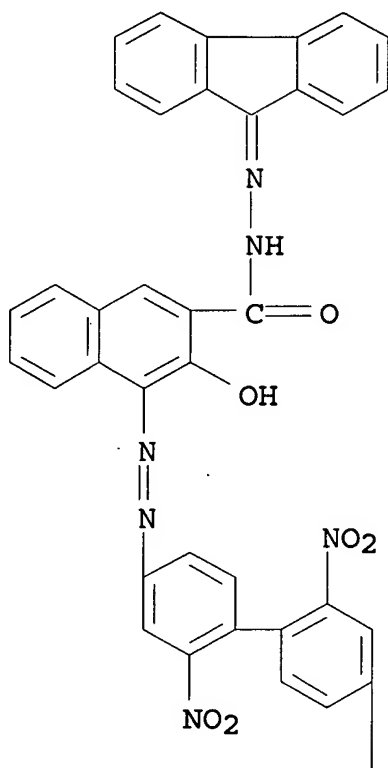
RL: USES (Uses)

(electrophotog. charge-generating pigment)

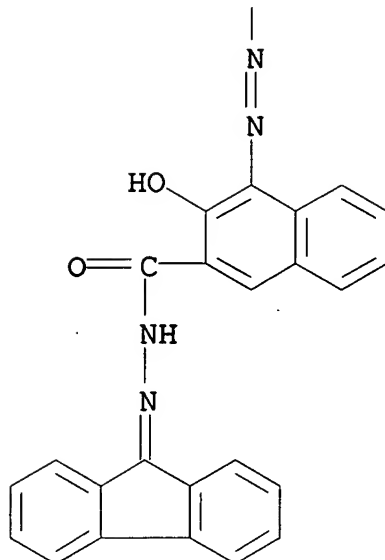
RN 95738-23-1 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(2,2'-dinitro[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)

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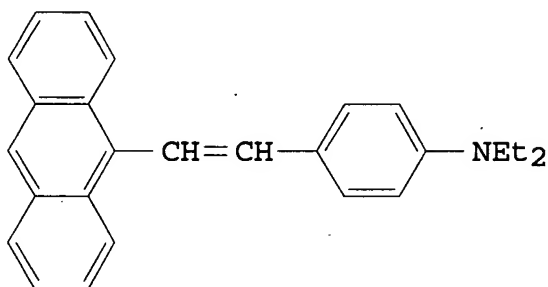
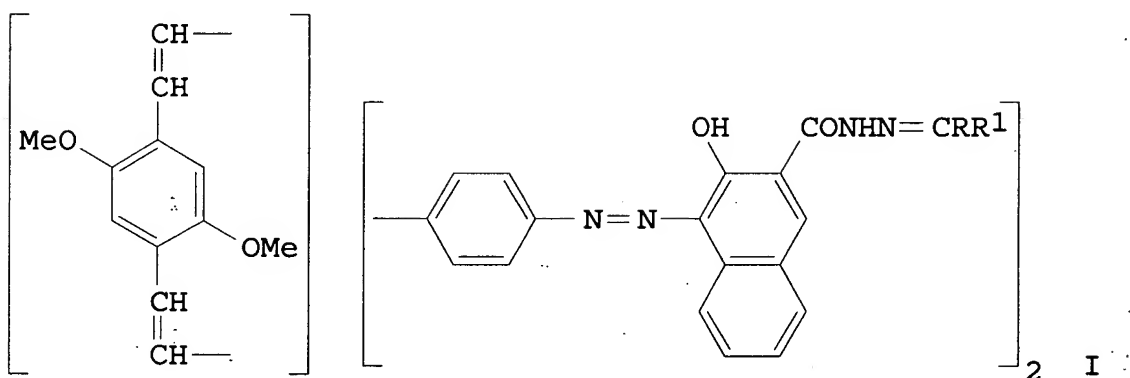
IC ICM G03G005-06
ICA C09B035-039; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 95738-14-0 95738-15-1 95738-16-2 95738-17-3 95738-18-4
95738-19-5 95738-20-8 95738-21-9 95738-22-0 **95738-23-1**
95738-24-2 95738-25-3 95738-26-4 95738-27-5 95738-28-6
95738-29-7 95738-30-0 95738-31-1 95756-13-1 95756-14-2
RL: USES (Uses)
(electrophotog. charge-generating pigment)
IT 57609-72-0 71530-63-7 75232-44-9
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. **charge-transfer** agent)

L14 ANSWER 35 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:140827 HCAPLUS
DOCUMENT NUMBER: 102:140827
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 59214035 | A2 | 19841203 | JP 1983-87674 | 19830520 |
| PRIORITY APPLN. INFO.: | | | | 19830520 |

GI



AB Photosensitive layer of the electrophotog. photoreceptor formed on conductive support contains a bisazo dye having the general formula I (R,R1 = H, lower alkyl, aralkyl, arom. group, heterocyclic group; R and R1 may be identical and may together represent the atoms

necessary to form a ring). Claimed dyes are good charge generators and provides durable photoreceptors. Thus, a bisazo compd. (I; R = Ph; R₁ = H) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts and THF were dispersed and coated on an Al-laminated polyester film support to form a charge generating layer. The **charge transfer** layer was formed by overcoating with a THF soln. contg. **charge transfer** agent II 2 and polycarbonate resin (Panlite K1300; Teijin chems. Ltd.) 2 parts in THF. Photoreceptor upon charging to -1010 V showed a sensitivity (lx-s for half decay of voltage) of 3.1. Copying tests gave >10,000 copies without the formation of blemishes.

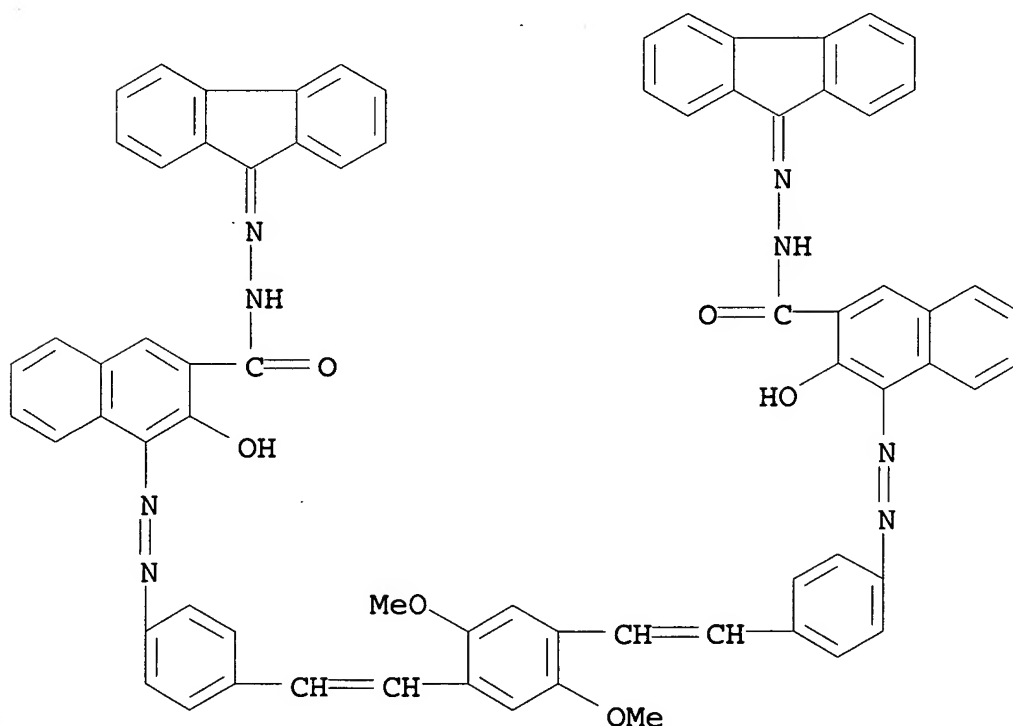
IT 95654-43-6

RL: USES (Uses)

(electrophotog. charge generating agent)

RN 95654-43-6 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(2,5-dimethoxy-1,4-phenylene)bis(2,1-ethenediyl-4,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazide) (9CI) (CA INDEX NAME)



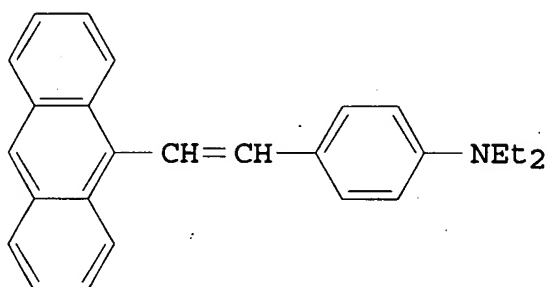
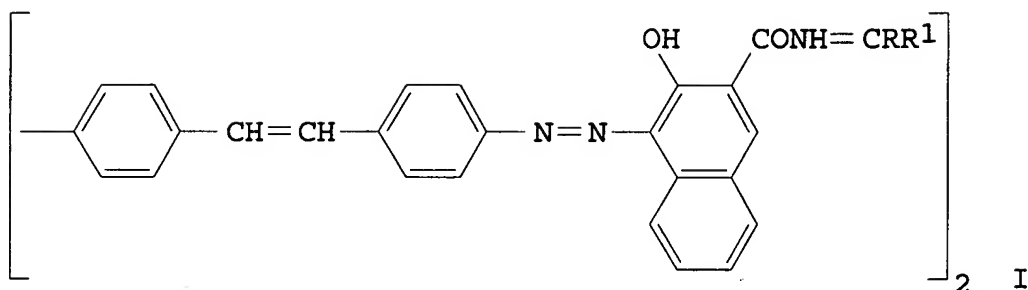
IC ICM G03G005-06
ICS C09B035-039; H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 95654-39-0 95654-40-3 95654-41-4 95654-42-5 **95654-43-6**
95654-44-7 95654-45-8 95676-92-9 95676-93-0
95676-94-1
RL: USES (Uses)
(electrophotog. charge generating agent)
IT 57609-72-0 75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor with charge generating layer contg.
bisazo dye and **charge transfer** layer contg.)
IT 71530-63-7
RL: USES (Uses)
(electrophotog. photoreceptor with charge generator layer contg.
bisazo dye and **charge transfer** layer contg.)

L14 ANSWER 36 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:140826 HCAPLUS
DOCUMENT NUMBER: 102:140826
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 59214036 | A2 | 19841203 | JP 1983-87675 | 198305 20 |
| PRIORITY APPLN. INFO.: | | | JP 1983-87675 | 198305 20 |

GI



AB Photosensitive layer of the electrophotog. photoreceptor formed on conductive support contains a bisazo dye having the general formula I (R, R1 = H, lower alkyl, aralkyl, arom. group, heterocyclic group; R and R1 may be the same and may together represent the atoms necessary to form a ring). Claimed dyes are good charge generators and provide durable photoreceptor. Thus, a bisazo compd. (I; R = Ph; R1 = H) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts and THF were dispersed and coated on Al-laminated polyester film to form a charge generating layer. The **charge transfer** layer was formed by overcoating with a THF soln. contg. the **charge transfer** agent II 2 and polycarbonate resin (Panlite K1300; Teijin Chems. Ltd.) 2 parts in THF. Photoreceptor when charged to -1210 V, showed a sensitivity (lx-s for half decay of voltage) of 5.0. Copying tests gave >10,000 copies without the formation of blemishes.

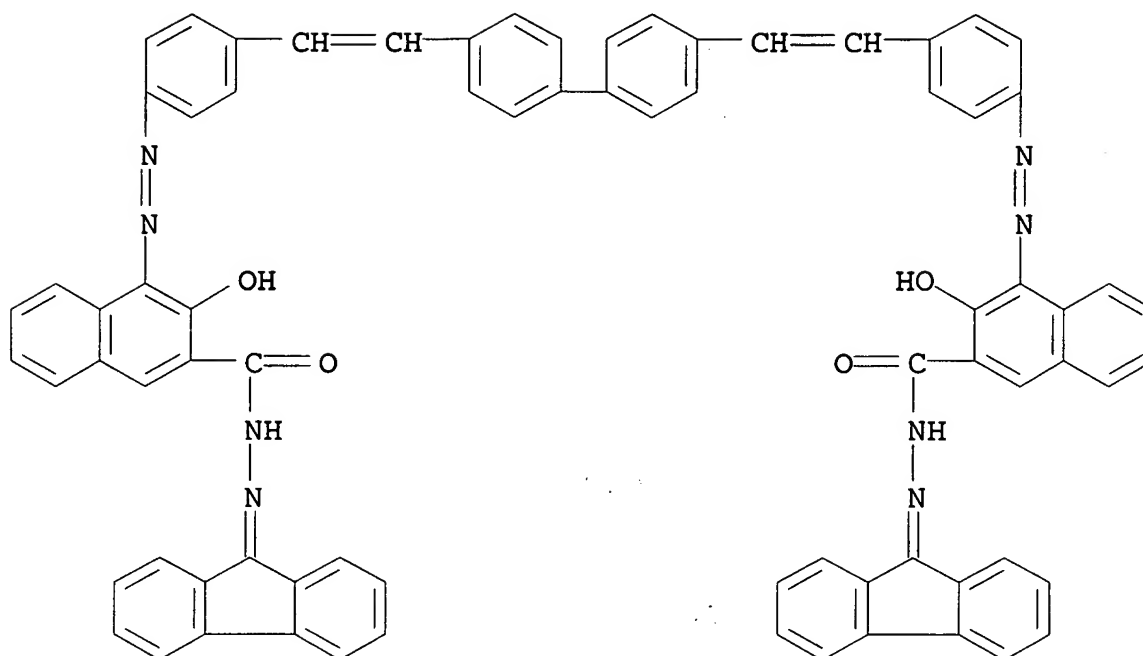
IT 95676-96-3

RL: USES (Uses)

(electrophotog. charge generating agent)

RN 95676-96-3 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[[1,1'-biphenyl]-4,4'-diylbis(2,1-ethenediyl-4,1-phenyleneazo)]bis[3-hydroxy-, bis(9H-fluoren-9-ylidenehydrazone) (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS C09B035-023; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 95654-46-9 95654-47-0 95654-48-1 95654-49-2 95654-50-5
95654-51-6 95654-52-7 95676-95-2 95676-96-3
95676-97-4
RL: USES (Uses)
(electrophotog. charge generating agent)
IT 57609-72-0 71530-63-7 75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor with charge generating layer contg. bisazo dye and charge transport layer contg.)

L14 ANSWER 37 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN:
ACCESSION NUMBER: 1985:140824 HCAPLUS
DOCUMENT NUMBER: 102:140824
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13. pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

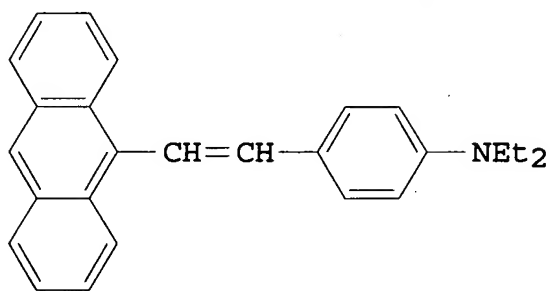
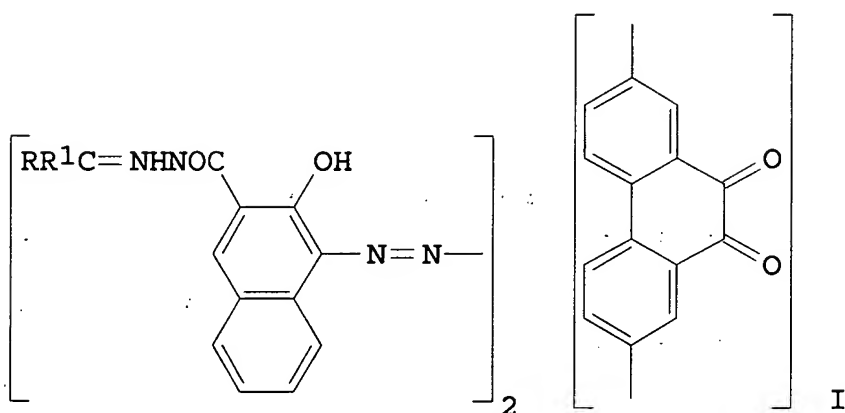
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| JP 59218452 | A2 | 19841208 | JP 1983-92480 | 19830527 |
| JP 04022263 | B4 | 19920416 | JP 1983-92480 | 19830527 |

PRIORITY APPLN. INFO.:

GI



AB Electrophotog. photoreceptor has a conductive support and a photoreceptor layer contg. a bisazo dye having the general formula I (R, R¹ = H, lower alkyl, (substituted) aralkyl, (substituted) arom.

or heterocyclic group; R and R1 may be identical and together represent the atoms necessary to form part of a ring system). The photoreceptor is easy to prep. and has a long lifetime. Thus, an Al-coated polyester film support was coated with a dispersion contg. I (R = H; R1 = Ph) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts, and THF, to form a 1 μ m charge-generating layer. A 20- μ m **charge transfer** layer was formed by coating a soln. of II 1 and polycarbonate resin (Panlite K1300; Teijin Chems.) 1 part in THF. The photoreceptor when charged to -1030 V showed a sensitivity (lx-s for half voltage decay) of 8.3. Copying tests gave >10,000 copies free of blemishes.

IT 95654-55-0

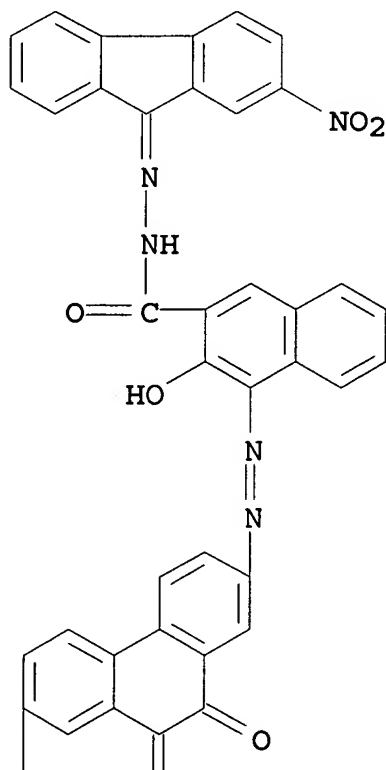
RL: USES (Uses)

(electrophotog. charge generating agent)

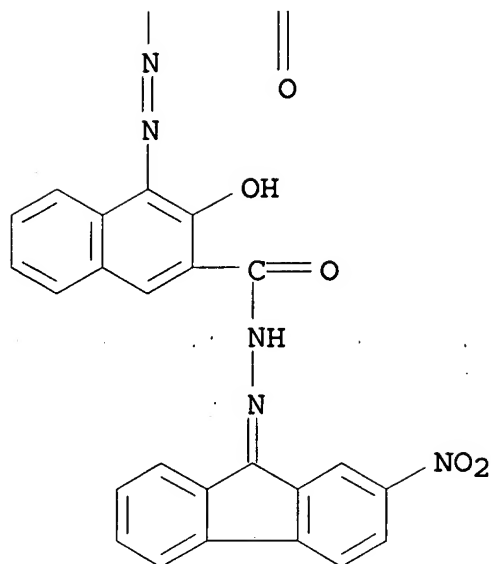
RN 95654-55-0 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(9,10-dihydro-9,10-dioxo-2,7-phenanthrenediyl)bis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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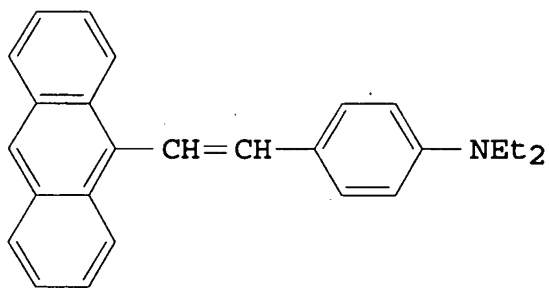
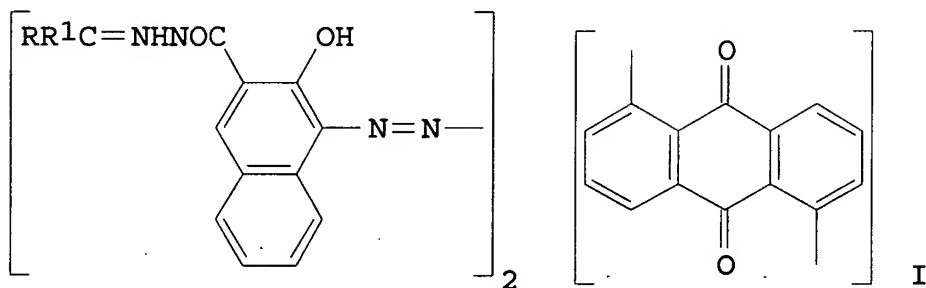
IC ICM G03G005-06
ICA C09B035-34; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 95654-53-8 95654-54-9 **95654-55-0** 95676-98-5
95676-99-6 95677-00-2 95677-01-3 95677-02-4 95677-03-5
95677-04-6
RL: USES (Uses)
(electrophotog. charge generating agent)
IT 57609-72-0 71530-63-7 75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor with charge generating layer contg.
bisazo dye and **charge transfer** layer contg.)

L14 ANSWER 38 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:140823 HCAPLUS
DOCUMENT NUMBER: 102:140823
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 59218453 | A2 | 19841208 | JP 1983-92481 | 19830527 |
| PRIORITY APPLN. INFO.: | | | | 19830527 |

GI



AB Electrophotog. photoreceptor has a conductive support and a photoreceptor layer contg. a bisazo dye having the general formula I (R,R¹ = H, lower alkyl, (substituted) aralkyl, (substituted) arom. or heterocyclic group; R and R¹ may be identical and may together

represent the no. of atoms necessary to form part of a ring system). The photoreceptor is easy to prep. and has a long lifetime. Thus, an Al-coated polyester film support was coated with a dispersion contg. I (R = H; R1 = Ph) 76, polyester resin (Vylon 200; Toyobo Co.) 25.2 parts, and THF, to form a 1- μ m charge-generating layer. A 20- μ m **charge transfer** layer was formed by overcoating with a soln. of II 1 and polycarbonate resin (Panlite K1300; Teijin Chems.) 1 part in THF. The photoreceptor when charged to -920 V showed a sensitivity (lx-s for half voltage decay) of 12. Copying tests gave >10,000 copies free of blemishes.

IT 95654-63-0

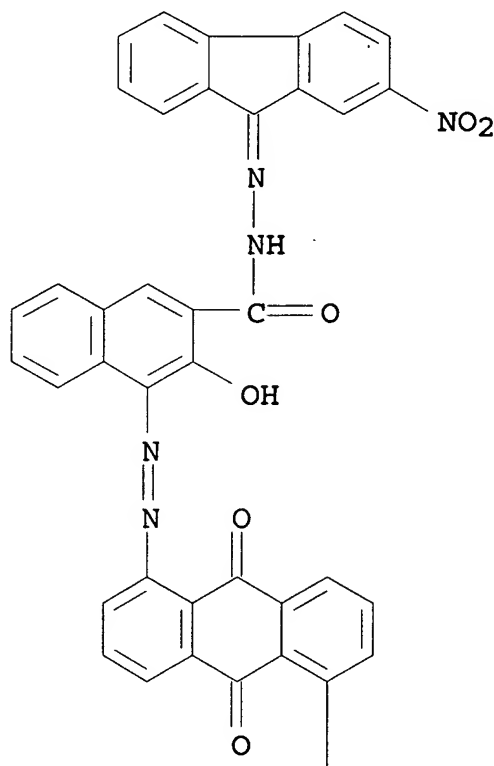
RL: USES (Uses)

(electrophotog. charge generating agent)

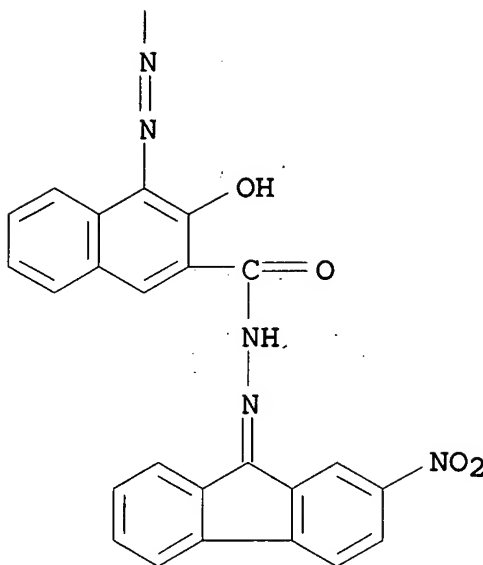
RN 95654-63-0 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(9,10-dihydro-9,10-dioxo-1,5-anthracenediyl)bis(azo)]bis[3-hydroxy-, bis[(2-nitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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IC ICM G03G005-06
ICA C09B035-34; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 95654-56-1 95654-57-2 95654-58-3 95654-59-4 95654-60-7
95654-61-8 95654-62-9 95654-63-0 95677-05-7
RL: USES (Uses)
(electrophotog. charge generating agent)
IT 57609-72-0 71530-63-7 75232-44-9
RL: USES (Uses)
(electrophotog. photoreceptor with charge generating layer contg. bisazo dye and **charge transfer** layer contg.)

L14 ANSWER 39 OF 39 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:15041 HCAPLUS
DOCUMENT NUMBER: 102:15041
TITLE: Electrophotographic photoreceptor
PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | |
| JP 59113446 | A2 | 19840630 | JP 1982-222964 | 198212 21 |
| JP 02021578 | B4 | 19900515 | | |
| US 4504560 | A | 19850312 | US 1983-560481 | 198312 12 |
| | | | JP 1982-222964 | A 198212 21 |

PRIORITY APPLN. INFO.:

GI For diagram(s), see printed CA Issue.

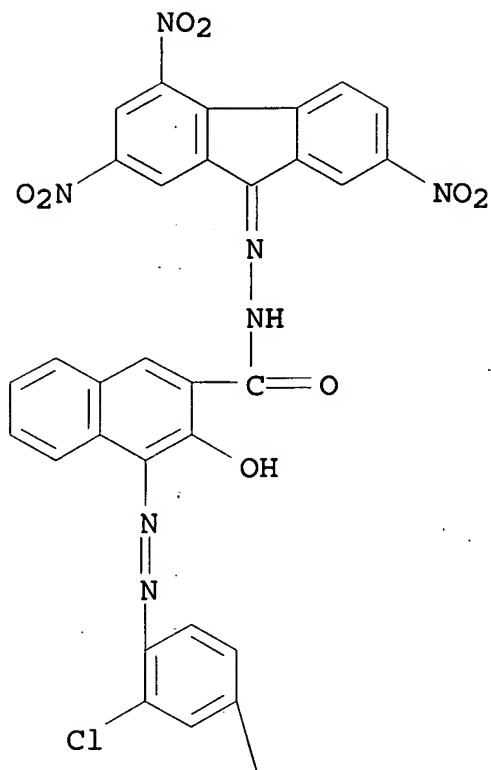
AB An electrophotog. photoreceptor contains a bisazo compd. having the formula I (R = H, Me, OMe, Cl, Br, NO₂; R₁ = CONHN:CHR₂, CONHN:CR₃R₄, II; R₂ = Ph, naphthyl, anthryl, pyridyl, thienyl, furyl, carbazolyl; R₃, R₄ = alkyl, aryl; A = cyclic group). The claimed compds. are good charge carrier-generating agents that provide a high sensitivity and durability, and can be readily prepd. Thus, an Al-laminated polyester film was coated with a dispersion contg. a polyester resin (Vylon 200; Toyobo Co.) 1 and I (R = Cl; R₁ = CONHN:CHPh) 3 wt. parts in THF. The material was then charged to + or -6KV, and the sensitivity (lx-s for half voltage decay) was 70 and 52, resp.

IT 93608-85-6
RL: USES (Uses)
(electrophotog. photoreceptor contg.)

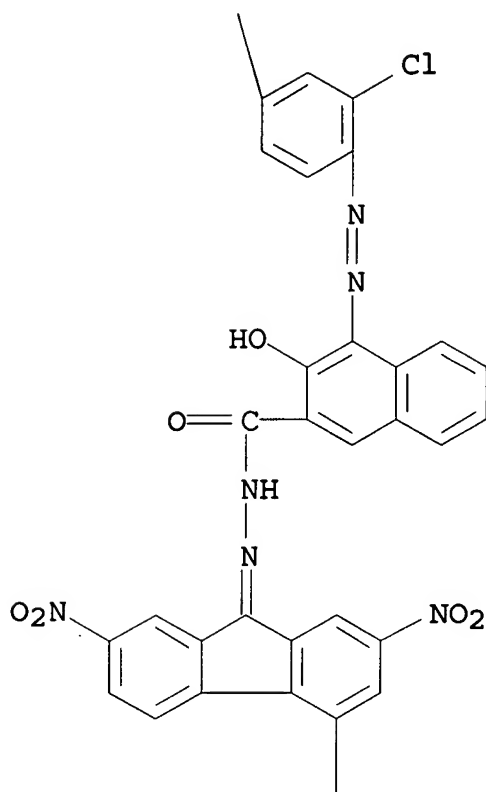
RN 93608-85-6 HCAPLUS

CN 2-Naphthalenecarboxylic acid, 4,4'-[(3,3'-dichloro[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[3-hydroxy-, bis[(2,4,7-trinitro-9H-fluoren-9-ylidene)hydrazide] (9CI) (CA INDEX NAME)

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NO₂

IC G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 93608-70-9 93608-71-0 93608-72-1 93608-73-2 93608-74-3
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 93608-80-1 93608-81-2 93608-82-3 93608-83-4 93608-84-5
93608-85-6 93608-86-7 93608-87-8 93608-88-9
 93608-89-0 93608-90-3 93608-91-4 93608-92-5 93608-93-6
 RL: USES (Uses)
 (electrophotog. photoreceptor contg.)

IT 32444-53-4 68189-23-1

RL: USES (Uses)

(electrophotog. photoreceptor with bisazo compd.-contg. charge
carrier-generating layer and **charge** carrier-
transfer layer contg.)

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